

ANCORP

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HIGH VACUUM PRODUCTS



VAT

EMPOWERING SCIENCE AND TECHNOLOGY SINCE 1965

Welcome to the

ANCORP

HIGH VACUUM
PRODUCT CATALOG

ANCORP is committed to delivering excellence in every product we manufacture.

We do so through our people, products, support, and resources.

We are committed to helping our customers solve the unique and
ever-evolving problems faced in their industries.

We strive to honor our commitments to our customers,
to exhibit excellence in everything we do, to care for our environment,
and to serve the communities we live in.



ANCORP is a family-owned U.S. manufacturer of high and ultra-high vacuum chambers, valves, and components. The company was founded in 1965 by Norman Vaudreuil in Worcester, Massachusetts as A&N Corporation.

When A&N was founded, the country was racing to put a man on the moon. Therefore, our first products were vacuum couplings used by space related industries. Shortly thereafter, we developed one of the first ball valves that would perform in high vacuum. A&N Corporation moved from Massachusetts to Inglis, Florida in 1976.



During the 1980s, our product offering continued to expand with the addition of ISO and metal sealed flanges and components. In 1995, David Vaudreuil, President and second generation owner, determined that a new facility was needed. Therefore, design and construction of our new headquarters commenced. In 1997, we moved into our new 40,000 square foot state-of-the-art manufacturing plant. This move positioned A&N Corporation to expand all phases of our high vacuum component development, including a new focus on providing our customers with their custom requirements.

In 2010, Daniel and Glenn Vaudreuil became third generation owners, as President and Vice President respectively. Under the direction of Daniel and Glenn, the new leadership of the company focused on innovation of the product line. This innovative focus gave birth to a patent approval for the XL Ball Valve, which we believe to be the world's best high vacuum ball valve.

In 2012, the factory in Williston, FL was expanded by 6,500 square feet to meet the growing demand for the Custom Fabrication division. The expansion centers around our new Okuma 5-Axis Vertical

Multitasking Machine that allows us to produce one-of-a-kind and production runs of custom chambers.

Our 46,500 square foot state-of-the-art facility is equipped with the latest manufacturing technology for CNC mills, lathes, and welding tools. While the tools and facility are important, our craftsmanship is what keeps our customers coming back to us. Our fabrication team is comprised of machinists who have decades of experience.

We've utilized decades of welding-





knowledge to create a vacuum welding program that AWS and ASME have thoroughly reviewed and certified. Our Quality Control procedures include dimensional checks using a Coordinate Measuring Machine (CMM) and leak checks using state-of-the-art helium mass spectrometer leak detectors.

In 2017, the company was rebranded to reflect the innovative culture of the new leadership. The name of the company was changed from A&N Corporation to **ANCORP**, and the slogan was changed to “Empowering Science and Technology Since 1965”.

Over the years, **ANCORP** has established itself as a world-class manufacturer of high and ultra-high vacuum products. **ANCORP** offers over 3,600 standard products including flanges, fittings, feed-throughs, traps, viewports, and valves. We routinely manufacture customer specified products to meet the unique needs of our customers.

2020 presents new challenges and exciting new

opportunities as we joined forces with **VAT Group**, a world leader in vacuum valves. We believe this partnership has merged the world’s best high vacuum valves all in one place for our customers.

Big things are happening! **ANCORP** continues to innovate our products and update our facility with the latest technology to provide you with high quality products and faster service. Contact us today for a free estimate at:

Sales & Customer Service:
(800) FLANGE-1 (800-352-6431)

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Order Online:
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ANCORP’s web site allows users to order on-line, download electronic files and find contact information for your local sales representative or distributor.



THE ANCORP WAY

Empowering science and technology since 1965, ANCORP is committed to excellence in everything we do. The foundation for it all is our unique culture. The 26 Fundamentals that follow describe the behaviors that define that culture. They're what set us apart and drive our success. We call it: **The ANCORP Way.**

1. THINK **SAFE**, WORK **SAFE**.
2. Do the **RIGHT THING**, ALWAYS.
3. Do **QUALITY WORK**.
4. Be a **CUSTOMER ADVOCATE**.
5. **TAKE PRIDE** in our appearance.
6. Honor **COMMITMENTS**.
7. Treat others with **RESPECT** and **KINDNESS**.
8. **FIND A WAY**.
9. Be **RELENTLESS** about **IMPROVEMENT**.
10. Practice **BLAMELESS PROBLEM-SOLVING**.
11. Get **CLEAR** on **EXPECTATIONS**.
12. **TAKE OWNERSHIP**.
13. Show Meaningful **APPRECIATION**.
14. Think **TEAM FIRST**.
15. Be a **CONTINUOUS LEARNER**.
16. **LISTEN GENEROUSLY**.
17. **SPEAK STRAIGHT**.
18. **"BRING IT"** every day.
19. Invest in **RELATIONSHIPS**.
20. **OWN YOUR WORK**.
21. **BE A FANATIC** about **RESPONSE TIME**.
22. Maintain **WORK-LIFE HARMONY**.
23. **EMBRACE CHANGE**.
24. **PITCH IN** wherever necessary.
25. Reduce or **ELIMINATE WASTE**.
26. **KEEP THINGS FUN!**

CORE VALUES

HUMILITY

While confident in our abilities, we continuously strive to learn and improve.

DRIVEN

We are enthusiastic and committed to achieving our goals and delivering on our promises.

FAMILY

We create a safe, caring environment. We celebrate good times and provide support and compassion in times of need.

"Humility, I have learned, must never be confused with meekness. Humility is being open to the ideas of others." - **Simon Sinek**

"You can't build a reputation on what you're going to do."
- **Henry Ford**

"A great place to work is one where employees trust the people they work for, have pride in what they do, and enjoy the people they work with." - **Robert Levering**, Great Place to Work Institute

CORE PURPOSE

DEVELOP GREAT PEOPLE

DELIVER GREAT PRODUCTS

"People are the only sustainable advantage of an organization."
- **Richard Teerlink**, CEO of Harley Davidson

"If I cannot do great things, I can do small things in a great way."
- **Dr. Martin Luther King, Jr.**



SCAN ME

Learn more about what makes us different.

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ISO QF/KF/NW/LF Flanges & Fittings

ISO QF/KF/NW/LF Flanges & Fittings



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ISO-QF and LF FLANGES & FITTINGS

TECH TIP

Did you know?



ISO QF and LF flanges are known by several other names. QF is also called KF, NW, DN and Pneurop. LF is also called MF, PF, ISO-K, ISO-F



Overview

ISO-QF (Quick Flange) and LF (Large Flange) flanges are part of the same family of ISO standard elastomer sealed vacuum components. **ANCORP** ISO flanges and fittings are manufactured in accordance with ISO (International Standard Organization) 2861 standards and tolerances. These flanges are an economical, convenient and simplified means of constructing custom vacuum systems.

ISO flanges provide a complete range of fittings to mount with tubing sized 1/2 inch up to 20 inches in diameter. The flange system consists of two sexless, 360° rotatable flanges, a centering ring for alignment and support of the sealing ring and a fastener to compress the seal between the two flanges. ISO-QF and LF sealing components are similar, however, their fastening methods differ. **ANCORP** offers a complete line of flanges, fittings, valves, traps and accessories with ISO connections that can be used to create a complete vacuum system or pumping line.

Specifications:

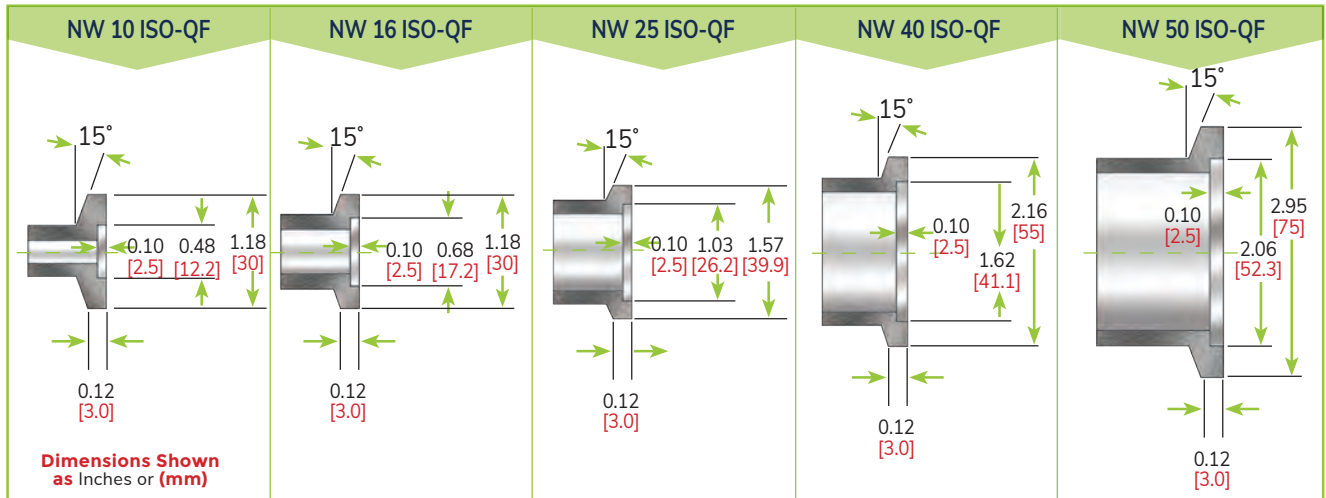
- Vacuum rated to 1×10^{-8} Torr.
- Leak rating $< 1 \times 10^{-9}$ std. cc/s helium
- Temperature range: -50°C to 200°C^*
- Materials:
 - Flanges and fittings: 304L stainless steel, 6061 T6 aluminum
 - Elastomer seals: Viton®, Buna, silicone

Features:

- Quickly connect and disconnect
- Reusable flanges and seals
- 360° rotatable
- Sexless flanges
- Adapters to other flange systems available
- Compatible with U.S. standard (imperial) and metric measurements
- Multiple fastening options
- Interchangeable with all other flanges and assemblies made to ISO standards

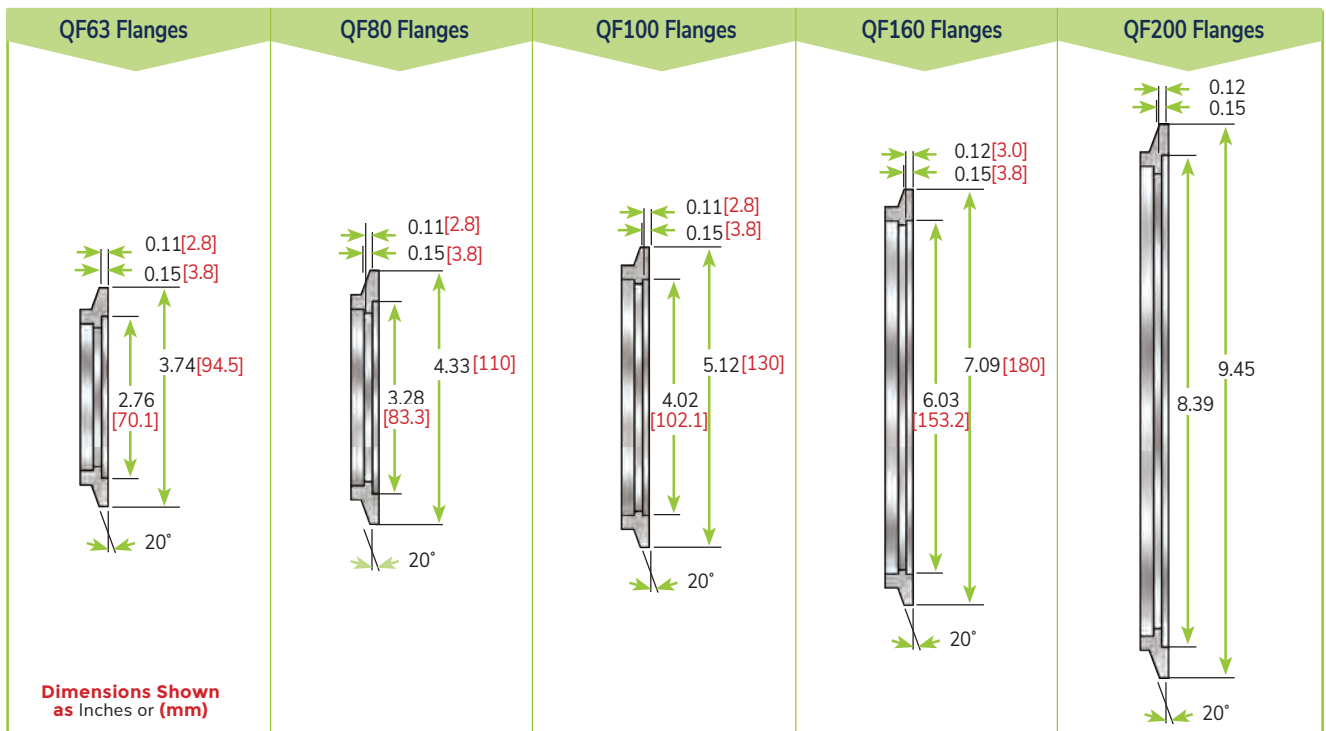
ISO Quick Flange Dimensions

The ISO standard flange interface dimensions are shown on these two pages and are not repeated throughout the catalog. Fittings (tees, crosses, elbows, etc.) and adapters, however, have no universal standards. These dimensions are shown throughout the catalog. See page 1.9 for a dimension cross-reference.



Large Size Quick Flange Dimensions

ANCORP now offers quick flanges up to size QF200 (8 inch tube outer diameter). ISO standards only apply to quick flanges up to size NW50 (2 inch tubing diameter). The sizes listed below were developed by vacuum component manufacturers within the United States. Quick clamps for these flanges are available in a variety of materials and designs. Adaptive fasteners are also available to allow users to seal directly from an LF or LFB style ISO flange to these more convenient large QF style flanges.

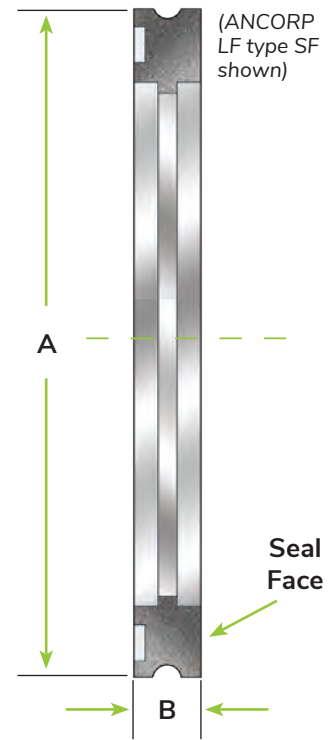


ISO Large Flange Dimensions Clamp Fastener Style (ISO-LF)

Dimensions Shown
as Inches (mm)

FLANGE SIZE	COMPATIBLE TUBE/PIPE O.D.	OUTER DIMENSIONS A	THICKNESS B	# CLAMPS REQUIRED
LF63	2.50 [63.5]	3.74 [95]	0.47 [12]	3-4
LF80	3.00 [76.2]	4.33 [110]	0.47 [12]	4-8
LF100	4.00 [101.6]	5.12 [130]	0.47 [12]	4-8
LF160	6.00 [152.4]	7.09 [180]	0.47 [12]	4-8
LF200	8.00 [203.2]	9.45 [240]	0.47 [12]	6-12
LF250	10.00 [254]	11.42 [290]	0.47 [12]	6-12
LF320	12 [304.8] or 12.75 [323.85]	14.57 [370]	0.67 [17]	8-12
LF400	16.00 [406.4]	17.72 [450]	0.67 [17]	8-16
LF500	20.00 [508]	21.65 [550]	0.67 [17]	12-16

ISO Multi-Fastener Flange



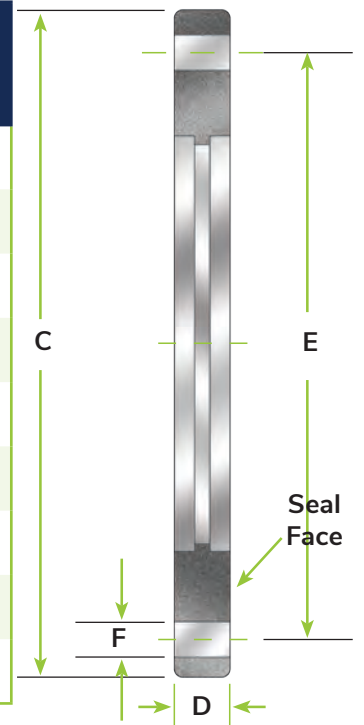
ISO Large Flange Dimensions

ISO Large Flange Dimensions Bolt Fastener Style (ISO-LFB)

Dimensions Shown
as Inches (mm)

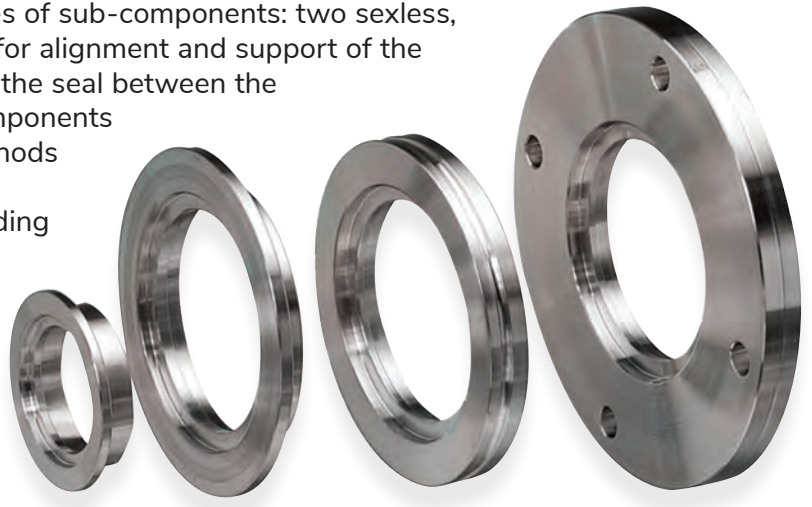
FLANGE SIZE	COMPATIBLE TUBE/PIPE O.D.	OUTER DIMENSIONS C	THICKNESS D	BOLT CIRCLE E	BOLT HOLES F	# of HOLES	WRENCH (mm)
LFB63	2.50 [63.5]	5.12 [130]	0.47 [12]	4.33 [110]	0.35 [9]	4	13
LFB80	3.00 [76.2]	5.71 [145]	0.47 [12]	4.92 [125]	0.35 [9]	8	13
LFB100	4.00 [101.6]	6.50 [165]	0.47 [12]	5.71 [145]	0.35 [9]	8	13
LFB160	6.00 [152.4]	8.86 [225]	0.63 [16]	7.87 [200]	0.43 [11]	8	17
LFB200	8.00 [203.2]	11.22 [285]	0.63 [16]	10.24 [260]	0.43 [11]	12	17
LFB250	10.00 [254]	13.19 [335]	0.63 [16]	12.20 [310]	0.43 [11]	12	17
LFB320	12 [304.8] or 12.75 [323.85]	16.73 [425]	0.79 [20]	15.55 [395]	0.55 [14]	12	19
LFB400	16.00 [406.4]	20.08 [425]	0.79 [20]	18.90 [480]	0.55 [14]	16	19
LFB500	20.00 [508]	24.02 [610]	0.79 [20]	22.83 [580]	0.55 [14]	16	19

ISO Bolted Flange
(ANCORP LFB type SF shown)



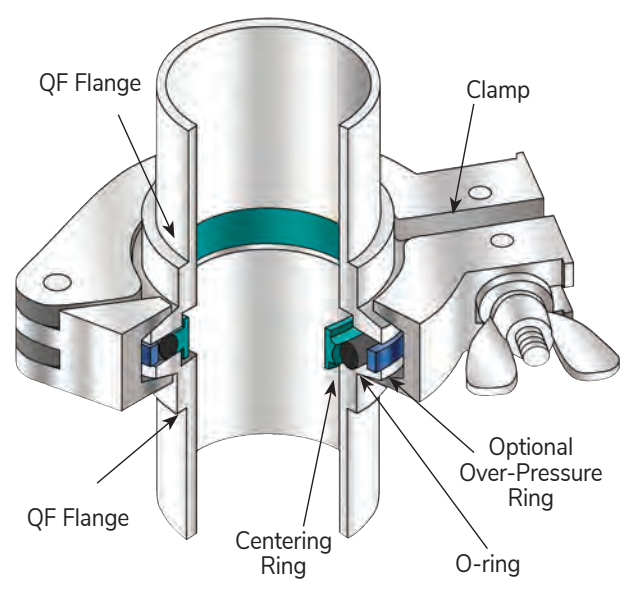
ISO Standard Sealing Assemblies

An ISO seal assembly consists of 3 types of sub-components: two sexless, 360° rotatable flanges, a centering ring for alignment and support of the sealing ring and a fastener to compress the seal between the two flanges. ISO-QF and LF sealing components are similar, however their fastening methods differ. Because of this, there are some differences in flange appearance depending on which fastening method you employ.



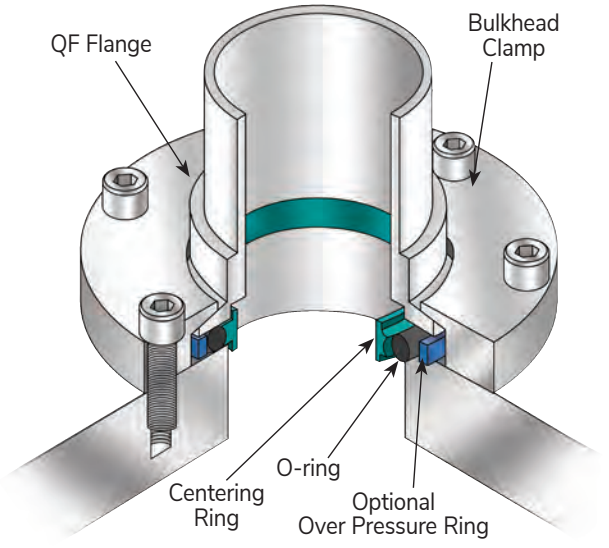
ANCORP uses different Reference Number prefixes to distinguish between ISO flange types. See the illustrations below and on the following pages for quick reference.

ISO-QF Quick Clamp Seal Assembly



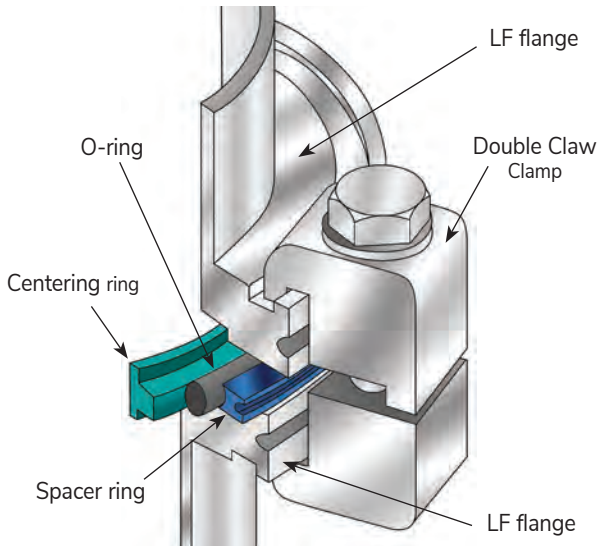
This is the commonly preferred method for fastening ISO flange connections due to the fact that the quick clamp offers the fastest and easiest fastening method for creating a reliable ISO vacuum seal. Traditionally these clamps have been limited to use with ISO flanges QF10 to QF50 (.75 inch to 2 inch tube outer diameter), but **ANCORP** now offers quick clamps and compatible flanges up to size QF200 (8 inch tube outer diameter). Quick clamps are available in a variety of materials and designs.

ISO-QF Bulkhead Clamp Seal Assembly



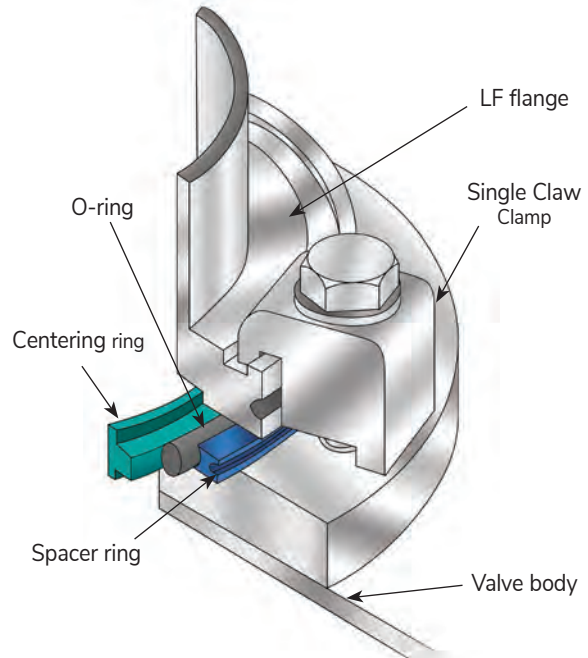
Bulkhead clamps are used to fasten ISO-QF style clamps directly to valves, chamber walls or base-plates. The object to which the flange is sealing must have a compatible bolt hole pattern and sealing groove machined into the sealing surface.

ISO-LF Double Claw Clamp Seal Assembly



This is traditionally the most popular clamp fastening system for ISO sizes LF63 (2.5 inch tube outer diameter) and larger. This fastening system requires the use of more than one clamp per flange connection. They require more work per seal assembly, but they offer greater strength than the quick clamp if the seal assembly must bear a lateral load. These clamps are the only clamps capable of sealing sizes LF250 to LF500 (10 inch to 20 inch tubing outer diameter).

ISO-LF Single Claw Clamp Seal Assembly

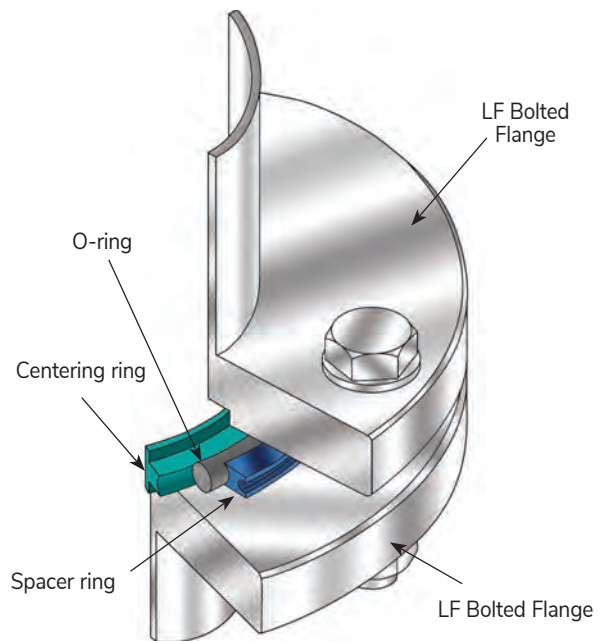


Single claw clamps are used to fasten ISO-LF style clamps directly to LFB flanges with tapped bolt holes, valves, chamber walls or baseplates. The object to which the flange is sealing must have a compatible bolt hole pattern and sealing groove machined into the sealing surface.

ISO-LFB Clamp Seal Assembly

The original means of fastening ISO flange connections offers good lateral load strength like the claw clamp, but also requires more than one bolt set per flange connection like the claw clamp. One great disadvantage to using this fastening system is that the user loses the ability to have infinitely rotatable flanges. Great care must be taken to achieve bolt hole alignment through careful design and installation or the use of rotatable and non-rotatable flanges within your system.

Note: To create a rotatable LFB flange a rotatable bolt ring is added to a standard LF style flange.



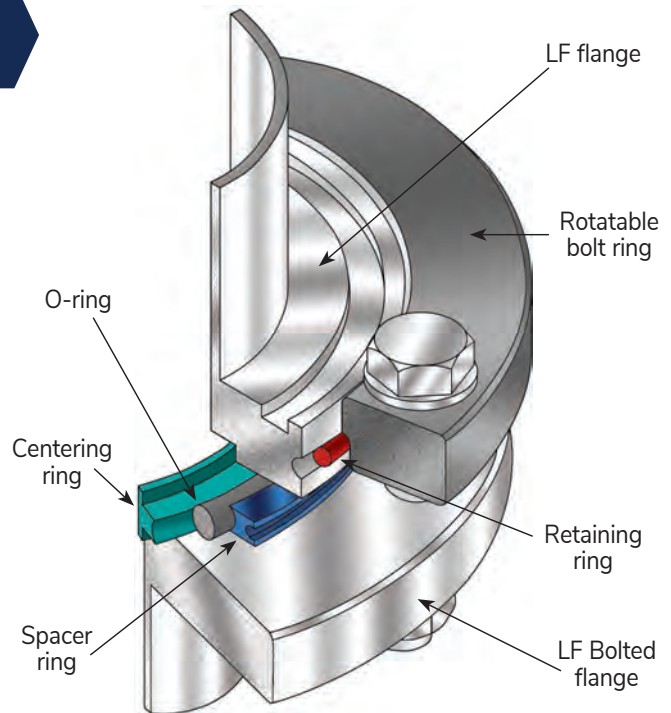
ISO Adaptive Sealing Assemblies

The ISO vacuum flange system accommodates the need to connect different styles of ISO flanges and fasteners through adaptive subcomponents. These adaptive components fit around the outer diameter of the flange and allow the direct connection of two different types of ISO flange.

ISO-LF to ISO-LFB Adaptive Seal Assembly

This fastener subcomponent fits around the outer diameter of a claw clamp style LF flange. This allows the flange to behave as a rotatable bolted style LFB flange to ease bolt-hole alignment issues when assembling the vacuum system.

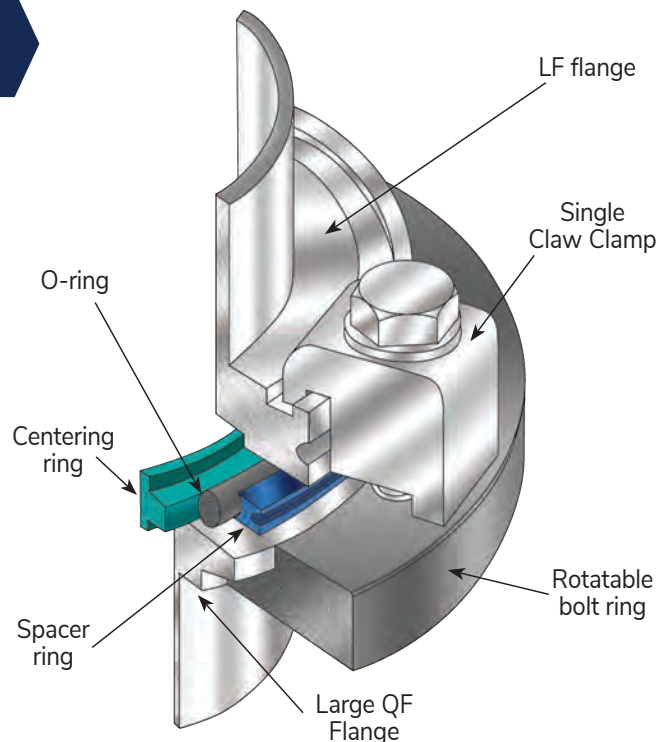
This assembly also has the advantage of having a low profile as compared to claw clamp fasteners. After the rotatable bolt ring is mounted to the LF flange a bolt kit is used to fasten the two flanges together.



ISO-LF to ISO-QF Adaptive Seal Assembly

Adaptive fasteners allow vacuum users to convert directly from one style of ISO fastening flanges to another without the purchase of an adaptive nipple fitting. This saves money and reduces the space needed to accomplish the flange adaptation within your system.

The **ANCORP** adaptive ISO fastener can convert a bolted or claw clamp style flange directly to a quick clamp flange for the same tubing diameter.



Sizes and Dimensions

All manufacturers of ISO components machine these flanges to measurements determined by the ISO standards referenced on the first page of this introduction, and as such, are interchangeable. It is worth noting that three of the flange sizes detailed on this page, namely the QF10, QF20 and QF32 are rarely used by modern vacuum equipment manufacturers in the United States and as such are not kept in stock by **ANCORP**. These can be manufactured upon request, but a better option is to use our adaptive centering ring. With our adaptive centering ring you can adapt directly from a QF10 to a QF16, QF20 to QF25, or QF32 to QF40. The connections can then be fastened with a standard clamp that corresponds with the larger of the two sizes.

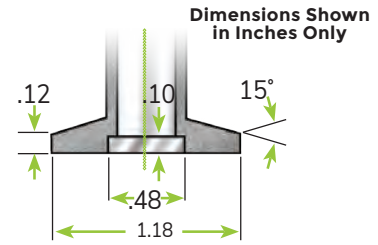
The ISO standard flange interface dimensions are shown on pg. 1.5 and are not repeated throughout the catalog.

Fittings (tees, crosses, elbows, etc.) and adapters have no universal standards; therefore, these dimensions are shown throughout the catalog. **ANCORP** uses U.S. dimensional standards for our ISO components. U.S. dimensional information is given in inches and references a tube's outer diameter. The international specifications for these flanges are stated in millimeters and refer to a tube's inside diameter. See the chart below for a cross-reference between the two standards.

ISO SIZE	TUBING I.D. (mm)	ANCORP REF #	TUBING O.D. (in)
NW10	10	QF10	0.50
NW16	16	QF16	0.75
NW25	25	QF25	1.00
NW40	40	QF40	1.50
NW50	50	QF50	2.00
NW63	63	LF63	2.50
NW80	80	LF80	3.00
NW100	100	LF100	4.00
NW160	160	LF160	6.00
NW200	200	LF200	8.00
NW250	250	LF250	10.00
NW320	320	LF320-1200	12.00
NW320	320	LF320-1275	12.75
NW400	400	LF400	16.00
NW500	500	LF500	20.00

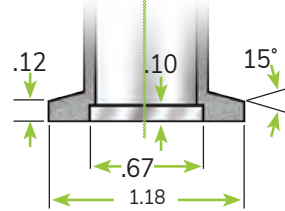
ISO NW10

Mates with **ISO QF16** using an adaptive centering ring.



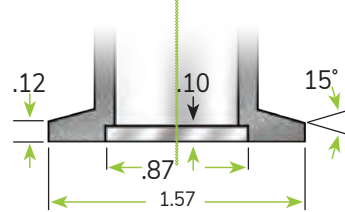
ISO QF16

Standard **ANCORP Quick Flange**



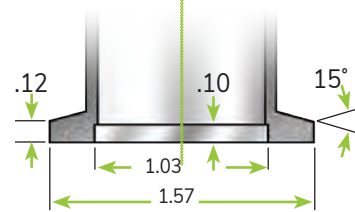
ISO NW20

Mates with **ISO QF25** using an adaptive centering ring.



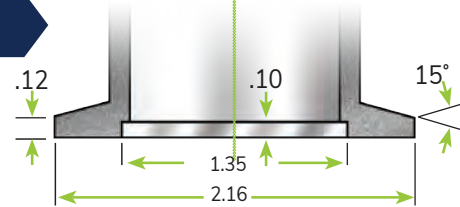
ISO QF25

Standard **ANCORP Quick Flange**



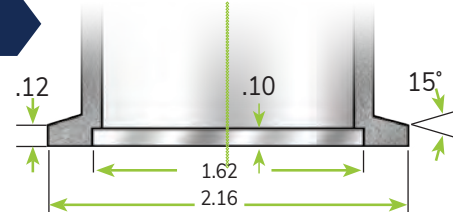
ISO NW32

Mates with **ISO QF40** using an adaptive centering ring.



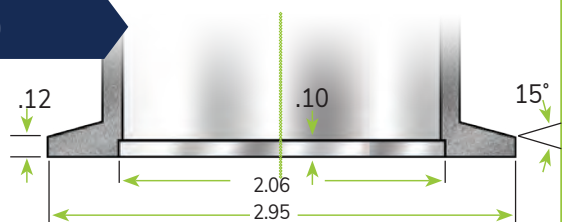
ISO QF40

Standard **ANCORP Quick Flange**



ISO QF50

Standard **ANCORP Quick Flange**



ISO Clamps and Fasteners

The ISO flange system has three traditional choices with which to fasten together your flanges and create a seal. These are the quick clamp connection, claw clamp connection and bolt kits. In addition to these fasteners there are adaptative bolt rings and bulkhead fasteners for special applications.

All of these fasteners have advantages for different applications and are described in detail below.



Specifications:

- High vacuum rated to 1×10^{-8} Torr
- Fasteners for all sizes of quick flange (ISO-QF) and large flange (ISO-LF) flanges
- Fastening materials: aluminum or stainless steel
- Compatible with all ISO standard vacuum flanges and fittings

Features:

- Reusable seals
- Sexless interface
- Infinitely rotatable
- Quick sealing and disassembly
- Ease installation
- Variety of fastening options
- Imperial and metric sizes available

Quick Clamps



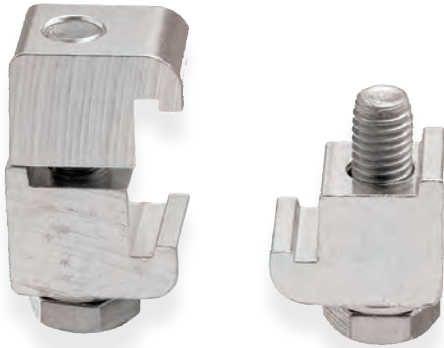
This is the commonly preferred method for fastening ISO flange connections due to the fact that they offer the fastest and easiest fastening method for creating a reliable ISO vacuum seal. Traditionally these clamps have been limited to use with ISO

flange sizes QF10 to QF50 (.75 inch to 2 inch tube outer diameter), but **ANCORP** now offers quick clamps and compatible flanges up to size QF200 (8 inch tube outer diameter). Quick clamps are available in a variety of materials and designs.



Claw Clamps

Claw clamps require the use of more than one clamp per flange connection. They require more work per seal assembly, but they offer greater strength than the quick clamp if the seal assembly must bear a lateral load. Claw clamps are traditionally the most popular clamps for ISO sizes LF63 (2.5 inch tube outer diameter) and larger. These clamps are the only clamps capable of sealing sizes LF250 to LF500 (10 inch to 20 inch tubing outer diameter).



TECH TIP

To create a rotatable LFB flange, a Rotatable bolt ring is added to a standard LF style flange.

Bolt Kits

The original means of fastening ISO flange connections offers good lateral load strength like the claw clamp, but also requires more than one bolt set per flange connection like the claw clamp.



One great disadvantage to using this fastening system is that the user loses the ability to have infinitely rotatable flanges. Great care must be taken to achieve bolt-hole alignment through careful design and installation or the use of rotatable and non-rotatable flanges within your system.

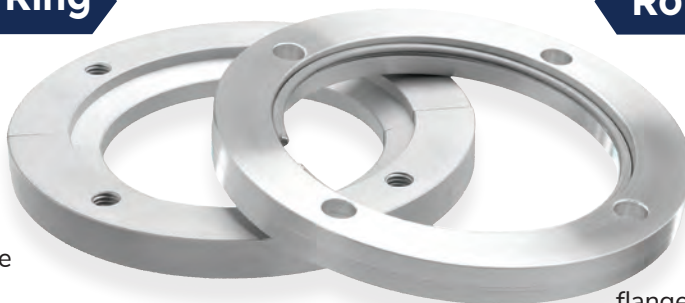
Bulkhead Clamps



Bulkhead clamps are used to fasten ISO-QF style flanges and components directly to valves, chamber walls, baseplates or bulkheads. The object to which the flange is sealing must have a compatible bolt hole pattern and sealing groove machined into the sealing surface.

Adaptive Bolt Ring

Adaptive bolt rings allow vacuum users to convert directly from one style of ISO fastening flanges to another without the purchase of an adaptive nipple fitting.



This saves money and reduces the space needed to accomplish the flange adaptation within your system. The **ANCORP** adaptive ISO fastener can convert a bolted or claw clamp style flange directly to a quick clamp flange for the same tubing diameter.

Rotatable Bolt Ring

Rotatable bolt rings are a subcomponent that fits around the outer diameter of a claw clamp style LF flange. This allows the flange to behave as a rotatable bolted style LFB flange to ease bolt-hole alignment issues when assembling the vacuum system.

This assembly also has the advantage of having a low profile as compared to claw clamp fasteners. After the rotatable bolt ring is mounted to the LF flange a bolt kit is used to fasten the two flanges together.

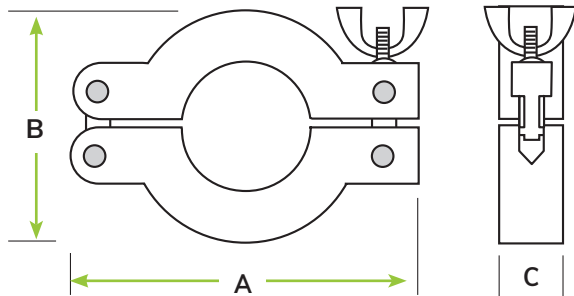
Wing-Nut Aluminum Clamp

Materials:

- Body: die-cast aluminum

Product Notes:

- Economy design for non-stressing vacuum applications



PART #	REFERENCE ID	TUBE SIZE (in)	A (in)	B (in)	C (in)	UNIT PRICE
4040000	QF10/16-WNC-AL	0.50 + 0.75	2.45	1.67	0.65	\$6.00
4040001	QF25-WNC-AL	1.00	2.86	2.16	0.65	\$7.50
4040002	QF40-WNC-AL	1.50	3.53	2.73	0.65	\$9.00
4040003	QF50-WNC-AL	2.00	4.80	3.70	0.90	\$15.00

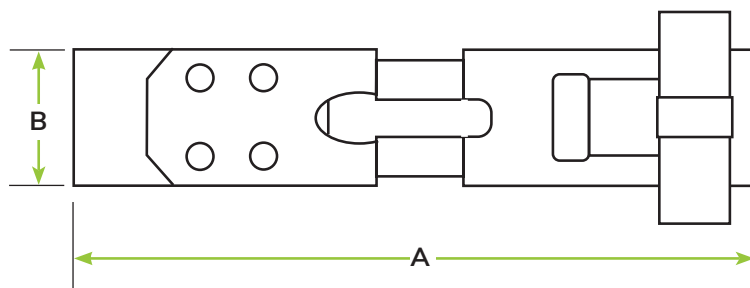
Band Clamp

Materials:

- Body: stainless steel

Product Notes:

- Fastens large size ISO-QF flanges with elastomer seals



PART #	REFERENCE ID	TUBE SIZE (in)	A (in)	B (in)	UNIT PRICE
4040008	QF63-BC	2.50	3.90	0.93	\$27.00
4040009	QF80-BC	3	4.75	0.93	\$32.00
4040010	QF100-BC	4	5.38	0.93	\$37.00
4040011	QF160-BC	6	7.25	0.93	\$42.00
4040012	QF200-BC	8	9.56	0.93	\$47.00

ORDERING NOTE: ANCORP recommends our line of CNC machined clamps for all connections that may bear a lateral load, positive pressure or dangerous substances.

ANCORP CNC Aluminum Clamp

Materials:

- Body: aluminum
- Hardware (pins, studs and hinges): stainless steel

Product Notes:

- Machined from solid bar for greatly increased strength
- Integrated handle lock to prevent accidental opening

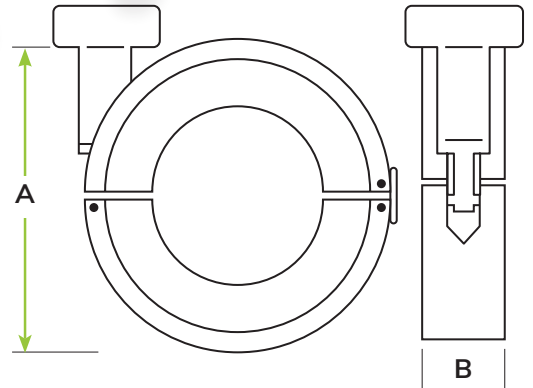


TECH TIP



The design of this clamp eliminates the need for over pressure rings on sizes QF16, QF25 and QF40

PART #	REFERENCE ID	TUBE SIZE (in)	A (in)	B (in)	UNIT PRICE
4050000	QF10/16-CLMP-AL	0.50 + 0.75	1.94	0.63	\$14.50
4050001	QF25-CLMP-AL	1.00	2.45	0.63	\$17.50
4050002	QF40-CLMP-AL	1.50	2.94	0.63	\$19.00
4050003	QF50-CLMP-AL	2.00	3.94	0.63	\$27.00



ANCORP CNC Stainless Steel Clamp

Materials:

- Body: stainless steel
- Hardware (pins, studs and hinges): stainless steel

- Integrated handle lock to prevent accidental opening
- Ideal for corrosive, high torque, high heat and low temperature applications
- Maximum closing torque = 6 ft. lbs.

Product Notes:

- Machined from solid bar for greatly increased strength

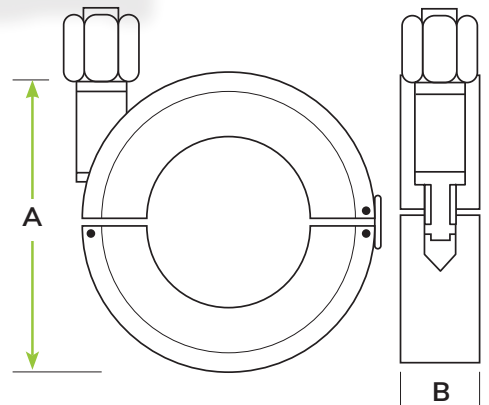


TECH TIP



The design of this clamp eliminates the need for over pressure rings on sizes QF16, QF25 and QF40

PART #	REFERENCE ID	TUBE SIZE (in)	A (in)	B (in)	UNIT PRICE
4050015	QF10/16-CS	0.50 + 0.75	1.94	0.63	\$43.00
4050016	QF25-CLMP-SS	1	2.45	0.63	\$53.00
4050017	QF40-CLMP-SS	1.50	2.94	0.63	\$63.00
4050018	QF50-CLMP-SS	2	3.94	0.63	\$73.00



Bulkhead Clamp

Bulkhead clamps are used to fasten ISO-QF style flanges and components directly to valves, chamber walls, baseplates or bulkheads. The object to which the flange is sealing must have a compatible bolt hole pattern and sealing groove machined into the sealing surface.

Materials:

- Body: aluminum
- Hardware (bolts and washers): stainless steel
- Bolt size: 10-32x5/8

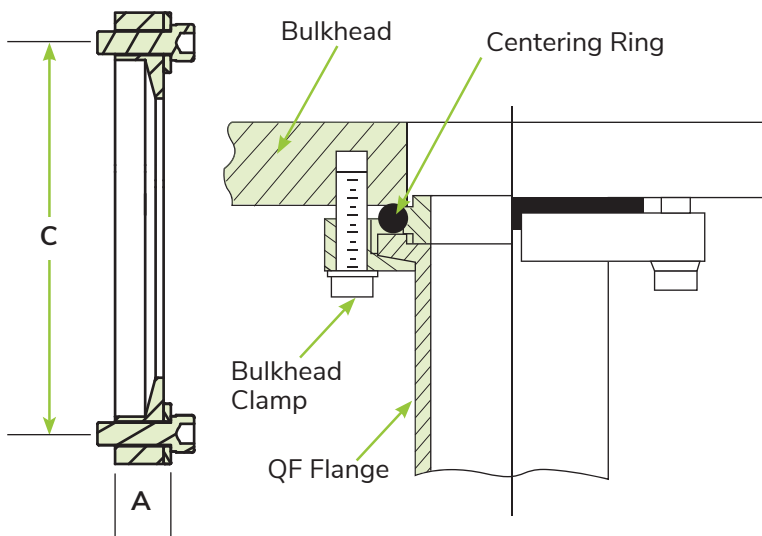
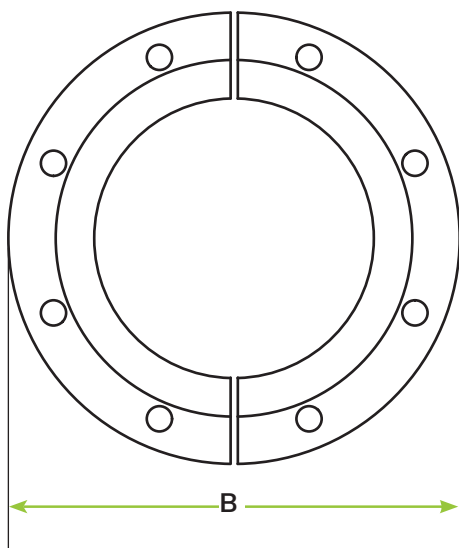
Product Notes:

- Utilizes a standard QF seal assembly
- Bolts included



TECH TIP

The design of this clamp eliminates the need for over pressure rings on sizes QF16, QF25 and QF40



PART #	REFERENCE ID	# OF BOLTS	A (in)	B (in)	C (in)	UNIT PRICE
4000000	QF10/16-BHC	6	0.36	2.00	1.50	\$18.00
4000001	QF25-BHC	6	0.39	2.38	1.89	\$21.00
4000002	QF40-BHC	6	0.37	2.94	2.44	\$25.00
4000003	QF50-BHC	8	0.40	3.75	3.25	\$29.00

Double Claw Clamp

Materials:

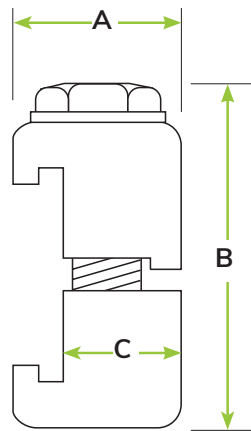
- Body: aluminum
- Hardware (bolts and washers): stainless steel

Product Notes:

- Fastens ISO-LF flanges

Options:

- **Call for price and delivery**
- Stainless steel clamp body



PART #	REFERENCE ID	FLANGE SIZE	A (in)	B (in)	C (in)	UNIT PRICE
4500000	LF63/100-DCC	63, 80, 100	0.96	1.99	0.66	\$6.50
4500001	LF160/250-DCC	160, 200, 250	1.10	2.05	0.80	\$7.00
4500002	LF320/500-DCC	320, 400, 500	1.34	2.56	1.04	\$13.50

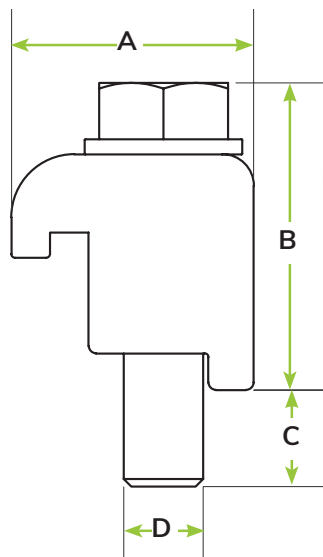
Single Claw Clamp

Materials:

- Body: aluminum
- Hardware (bolts and washers): stainless steel

Product Notes:

- Fastens ISO-LF flanges to tapped ISO-LFB flanges or components (valves, chambers) with a compatible bolt hole pattern and sealing groove.



Options: Call for price and delivery

- Stainless steel clamp body

PART #	REFERENCE ID	BOLT SIZE	FLANGE SIZE	A (in)	B (in)	C (in)	D (in)	UNIT PRICE
4500003	LF63/100-SCC	M8x35	63, 80, 100	0.95	1.20	0.655	0.39	\$5.50
4500004	LF160/250-SCC	M10x35	160, 200, 250	1.10	1.25	0.785	0.39	\$6.50
4500005	LF320/500-SCC	M12x50	320, 400, 500	1.34	1.57	0.965	0.72	\$9.00

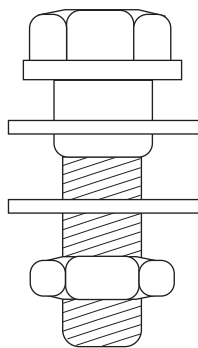
Double Flange Bolts

Materials:

- Hardware (bolts, nuts and washers): stainless steel

Product Notes:

- Fastens ISO-LF flanges
- Bolt kits include all of the bolt sets you will need for 1 ISO-LF sealing assembly.



PART #	REFERENCE ID	BOLT SIZE	# PER SET	UNIT PRICE
0604501	LFB63-DFB	M8x40	4	\$5.50
0604502	LFB80/100-DFB	M8x40	8	\$12.50
0604503	LFB160-DFB	M10x50	8	\$22.00
0604504	LFB200/250-DFB	M10x50	12	\$33.00
0604505	LFB320-DFB	M12x60	12	\$52.00
0604506	LFB400/500-DFB	M12x60	16	\$65.00

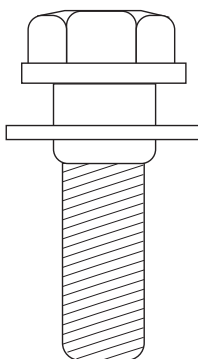
Tapped Flange Bolts

Materials:

- Hardware (bolts, nuts and washers): stainless steel

Product Notes:

- Fastens ISO-LFB flanges to tapped ISO-LFB flanges or components (valves, chambers) with a compatible bolt hole pattern and sealing groove.
- Bolt kits include all of the bolt sets you will need for one ISO-LF sealing assembly.



PART #	REFERENCE ID	BOLT SIZE	# PER SET	UNIT PRICE
0604510	LFB63-TFB	M8x30	4	\$3.50
0604511	LFB80/100-TFB	M8x30	8	\$7.00
0604512	LFB160-TFB	M10x35	8	\$13.50
0604513	LFB200/250-TFB	M10x35	12	\$20.00
0604514	LFB320-TFB	M12x45	12	\$31.00
0604515	LFB400/500-TFB	M12x45	16	\$44.00

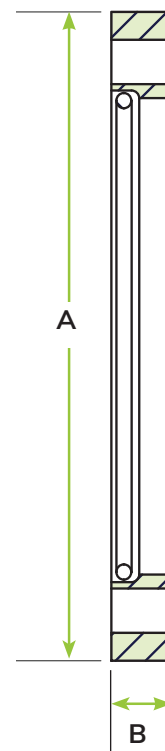
Rotatable Bolt Ring

Materials:

- Body: aluminum
- Retaining ring: stainless steel

Product Notes:

- Converts ISO-LF flanges to Rotatable ISO-LFB flanges
- O.D. and bolt pattern match ISO-LFB flanges
- **Retaining ring included**
- See pg. 1.18 for additional details



Rotatable Bolt Ring

PART #	REFERENCE ID	A O.D. (in)	B THICKNESS (in)	UNIT PRICE
4500060	LF63-250-RBR	5.12	0.47	\$145.00
4500061	LF80-300-RBR	5.71	0.47	\$155.00
4500062	LF100-400-RBR	6.50	0.47	\$175.00
4500063	LF160-600-RBR	8.86	0.63	\$350.00
4500064	LF200-800-RBR	11.22	0.63	\$385.00
4500065	LF250-1000-RBR	13.19	0.63	\$450.00
4500066	LF320-1200-RBR	16.73	0.79	\$775.00
4500067	LF400-1600-RBR	20.08	0.79	\$850.00
4500068	LF500-2000-RBR	24.02	0.79	\$950.00

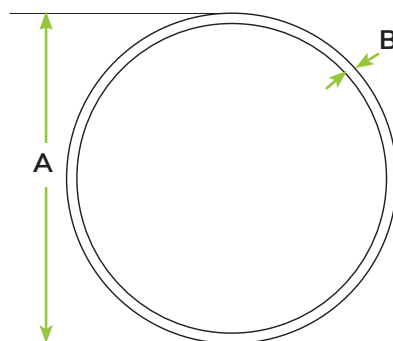
Replacement Retaining Ring

Materials:

- Stainless steel

Product Notes:

- Converts ISO-LF flanges to rotatable ISO-LFB flanges
- O.D. and bolt pattern match ISO-LFB flanges



PART #	REFERENCE ID	A O.D. (in)	B THICKNESS (in)	UNIT PRICE
4510036	LF63-250-RR	3.840	0.125	\$27.00
4510037	LF80-300-RR	4.456	0.125	\$32.00
4510038	LF100-400-RR	5.25	0.120	\$32.00
4510039	LF160-600-RR	7.26	0.180	\$34.00
4510040	LF200-800-RR	9.25	0.190	\$37.00
4510041	LF250-1000-RR	11.674	0.175	\$39.00
4510042	LF320-1200-RR	14.37	0.188	\$45.00
4510043	LF400-1600-RR	18.063	0.315	\$65.00
4510044	LF500-2000-RR	22.00	0.310	\$85.00

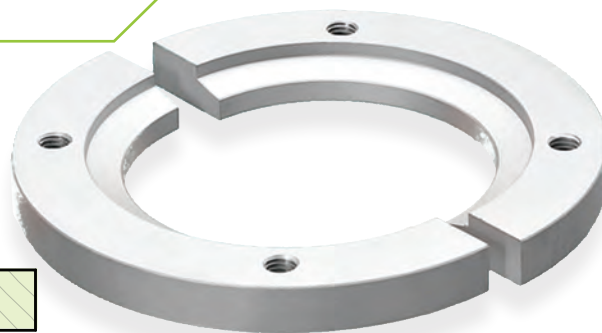
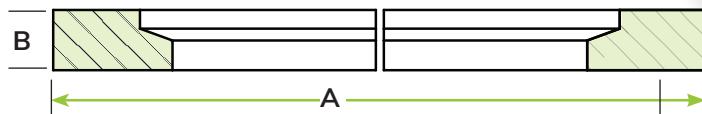
Adaptive Bolt Ring

Materials:

- Body: aluminum

Product Notes:

- Converts ISO-LF and ISO-LFB flanges to ISO-QF flanges
- O.D. and bolt pattern match ISO-LFB flanges



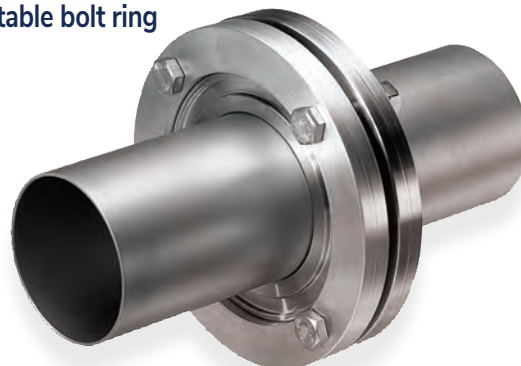
PART #	REFERENCE ID	A O.D. (in)	B THICKNESS (in)	UNIT PRICE
4001086	QF63-250-ABR	5.12	0.47	\$60.00
4001087	QF80-300-ABR	5.71	0.47	\$88.00
4001088	QF100-400-ABR	6.50	0.47	\$105.00
4001089	QF160-600-ABR	8.86	0.47	\$150.00
4001090	QF200-800-ABR	11.22	0.47	\$175.00

Rotatable Bolt Ring

ISO-LFB bolt fastener flange fastened to an ISO-LF flange with a rotatable bolt ring

Rotatable bolt rings are a subcomponent that fits around the outer diameter of a claw clamp style LF flange. This allows the flange to behave as a rotatable bolted style LFB flange to ease bolt-hole alignment issues when assembling the vacuum system.

This assembly also has the advantage of having a low profile as compared to claw clamp fasteners. After the rotatable bolt ring is mounted to the LF flange a bolt kit is used to fasten the two flanges together.



ISO Adaptive Bolt Ring

Adaptive bolt rings allow vacuum users to convert directly from one style of ISO-LF fastening flange to another without the purchase of an adaptive fitting. This saves money and reduces the space needed to accomplish the flange adaptation within your system. The **ANCORP** adaptive ISO fastener can convert a bolted or claw clamp style ISO-LF flange directly to a quick clamp flange for the same tubing diameter. (i.e. an LF80-300-SF can adapt directly to a QF80-300-SF)



ISO-LF clamp fastened flange directly adapted to an ISO-QF clamp flange of the same size.

ISO-LFB bolt fastened flange directly adapted to an ISO-QF clamp flange of the same size.

ISO Seals



ISO Seals

ANCORP provides ISO high vacuum seals and sealing assemblies for all ISO standard sizes.

We offer three different types of elastomer sealing rings and two different types of metallic supportive rings which can be configured to meet the needs of your specific application.

Specifications:

- High vacuum rated to 1×10^{-8} Torr
- Sealing materials: Viton®, Buna or silicone
- Compatible with all ISO standard vacuum flanges

Features:

- Reusable seals
- Sexless interface
- Infinitely rotatable
- Quick sealing and disassembly
- Ease installation
- Self-centering supportive ring
- Imperial and metric sizes available

Centering Ring Assemblies

The basic seal for the ISO flange system includes a supportive inner stainless steel ring and an elastomer outer ring (O-ring) which is compressed between the ISO flanges to create a vacuum tight seal.

ANCORP offers a choice of three different elastomers for the sealing ring (Viton®, Buna and silicone).



Adaptive Centering Ring Assemblies



These sealing assemblies allow you to adapt directly from the rarely used ISO-QF sizes (QF10, QF20 and QF32) to commonly available ISO-QF sizes (QF16, QF25 and QF40). The adapted assembly can then be fastened with a standard clamp that corresponds with the larger of the two sizes.

Screen Mesh Centering Ring Assemblies



These sealing assemblies are useful in many situations in which a vacuum system or instrument needs to be protected from contamination by particulate generated from outside the system or from within. These seal assemblies are made of the same sub-components as the standard centering ring assemblies described on the opposite page. The difference is that the supportive metallic ring for these seals has a screen mesh insert covering the inner aperture.

Replacement O-rings



The elastomer sealing rings (O-ring) for the ISO seal assembly must be used in conjunction with a metallic supportive ring. The elastomer component of this sealing assembly is a consumable item. When the O-ring no longer provides consistent vacuum tight seals replacement elastomer O-rings can be purchased separately from the supportive metallic ring to decrease cost of system maintenance. **ANCORP** offers a choice of three different elastomers for the sealing ring (Viton®, Buna and silicone).

Over-Pressure Rings



This centering ring accessory creates a barrier on the outer diameter of the elastomer sealing ring to prevent “blow out” due to the presence of pressures greater than 1 standard atmosphere within a vacuum system. A centering ring assembly with over-pressure ring can withstand up to 100psi of pressure depending on the size of the flange you are using. **ANCORP** CNC machined clamps have a built-in over-pressure ring design for sizes QF16, QF25, and QF40. With the use of these clamps there is no need for the added expense of an over-pressure ring addition to the centering ring assembly.

Centering Ring Assembly - Stainless Steel

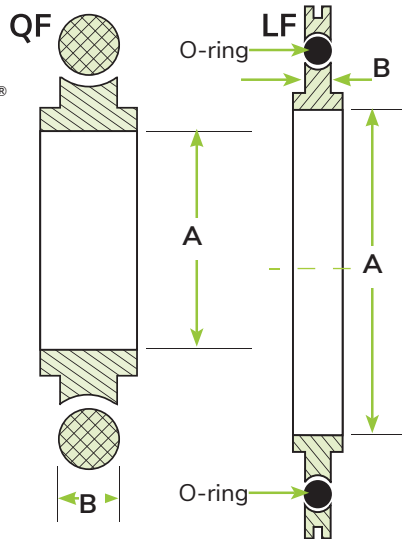
Centering Ring Assembly

Materials:

- Centering ring: stainless steel
- O-ring: Buna-N, Viton® or silicone
- Spacer ring (LF sizes only): aluminum

Product Notes:

- Metal centering ring aligns flanges during seal assembly and provides support for the elastomer sealing ring.



TEMPERATURE LIMITS			
O-ring MATERIAL	LOW	SUSTAINED HIGH	INTERMITTENT USE
Viton®	-26°C	150°C	205°C
Buna	-20°C	80°C	100°C
Silicone	-50°C	150°C	200°C

Silicone is chemically resistant

Stainless Steel Centering Ring

PART #	REFERENCE ID	A (in)	B (in)	UNIT PRICE
Viton® Seals				
4000005	QF16-075-CTR-VT	0.63	0.21	\$6.00
4000006	QF25-100-CTR-VT	0.98	0.21	\$7.00
4000007	QF40-150-CTR-VT	1.53	0.21	\$10.50
4000008	QF50-200-CTR-VT	1.97	0.21	\$14.00
4500008	LF63-250-CTR-VT	2.64	0.15	\$50.00
4500011	LF80-300-CTR-VT	3.15	0.15	\$64.00
4500014	LF100-400-CTR-VT	3.90	0.15	\$64.00
4500017	LF160-600-CTR-VT	5.91	0.15	\$78.00
4500020	LF200-800-CTR-VT	8.27	0.15	\$110.00
4500023	LF250-1000-CTR-VT	10.14	0.15	\$138.00
4500026	LF320-1200-CTR-VT	12.28	0.22	\$395.00
4500029	LF400-1600-CTR-VT	15.42	0.22	\$467.00
4500032	LF500-2000-CTR-VT	19.41	0.22	\$1,250.00
Buna-N Seals				
4000010	QF16-075-CTR-BN	0.63	0.21	\$5.50
4000011	QF25-100-CTR-BN	0.98	0.21	\$6.50
4000012	QF40-150-CTR-BN	1.53	0.21	\$9.50
4000013	QF50-200-CTR-BN	1.97	0.21	\$11.00
4500006	LF63-250-CTR-BN	2.65	0.15	\$47.00
4500009	LF80-300-CTR-BN	3.15	0.15	\$57.00

PART #	REFERENCE ID	A (in)	B (in)	UNIT PRICE
Buna-N Seals				
4500012	LF100-400-CTR-BN	3.90	0.15	\$57.00
4500015	LF160-600-CTR-BN	5.91	0.15	\$66.00
4500018	LF200-800-CTR-BN	8.27	0.15	\$86.00
4500021	LF250-1000-CTR-BN	10.14	0.15	\$115.00
4500024	LF320-1200-CTR-BN	12.28	0.22	\$305.00
4500027	LF400-1600-CTR-BN	15.42	0.22	\$467.00
4500030	LF500-2000-CTR-BN	19.41	0.22	\$1,215.00
Silicone Seals				
4000015	QF16-075-CTR-SN	0.63	0.21	\$6.50
4000016	QF25-100-CTR-SN	0.98	0.21	\$8.00
4000017	QF40-150-CTR-SN	1.53	0.21	\$11.50
4000018	QF50-200-CTR-SN	1.97	0.21	\$14.00
4500007	LF63-250-CTR-SN	2.65	0.15	\$53.00
4500010	LF80-300-CTR-SN	3.15	0.15	\$67.00
4500013	LF100-400-CTR-SN	3.90	0.15	\$67.00
4500016	LF160-600-CTR-SN	5.91	0.15	\$82.00
4500019	LF200-800-CTR-SN	8.27	0.15	\$115.00
4500022	LF250-1000-CTR-SN	10.14	0.15	\$125.00
4500025	LF320-1200-CTR-SN	12.28	0.22	\$325.00
4500028	LF400-1600-CTR-SN	15.42	0.22	\$467.00
4500031	LF500-2000-CTR-SN	19.41	0.22	\$1,250.00

ORDERING NOTE: Centering rings with screen mesh are available on pg. 1.24.

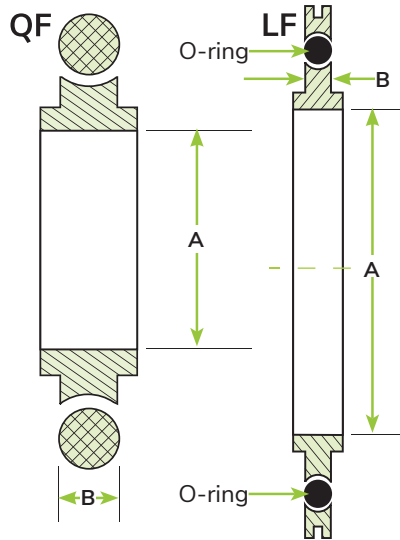
Centering Ring Assembly - Aluminum

Materials:

- Centering ring: aluminum
- O-ring: Buna-N, Viton® or silicone
- Spacer ring (LF sizes only): aluminum

Product Notes:

- Metal centering ring aligns flanges during seal assembly and provides support for the elastomer sealing ring.



TEMPERATURE LIMITS			
O-ring MATERIAL	LOW	SUSTAINED HIGH	INTERMITTENT USE
Viton®	-26°C	150°C	205°C
Buna	-20°C	80°C	100°C
Silicone	-50°C	150°C	200°C

Silicone is chemically resistant

Aluminum Centering Ring

PART #	REFERENCE ID	A (in)	B (in)	UNIT PRICE	PART #	REFERENCE ID	A (in)	B (in)	UNIT PRICE
Viton® Seals					Buna-N Seals				
4000020	QF16-075-CTR-AL-VT	0.63	0.21	\$5.50	4500039	LF100-400-CTR-AL-BN	3.90	0.15	\$35.00
4000021	QF25-100-CTR-AL-VT	0.98	0.21	\$6.50	4500042	LF160-600-CTR-AL-BN	5.91	0.15	\$42.00
4000022	QF40-150-CTR-AL-VT	1.53	0.21	\$8.50	4500045	LF200-800-CTR-AL-BN	8.27	0.15	\$54.00
4000023	QF50-200-CTR-AL-VT	1.97	0.21	\$11.00	4500048	LF250-1000-CTR-AL-BN	10.14	0.15	\$73.00
4500035	LF63-250-CTR-AL-VT	2.64	0.15	\$29.00	4500051	LF320-1200-CTR-AL-BN	12.28	0.21	\$120.00
4500038	LF80-300-CTR-AL-VT	3.15	0.15	\$35.00	4500054	LF400-1600-CTR-AL-BN	15.42	0.21	\$160.00
4500041	LF100-400-CTR-AL-VT	3.90	0.15	\$35.00	4500057	LF500-2000-CTR-AL-BN	19.41	0.21	CALL
4500044	LF160-600-CTR-AL-VT	5.91	0.15	\$47.00	Silicone Seals				
4500047	LF200-800-CTR-AL-VT	8.27	0.15	\$64.00	4000030	QF16-075-CTR-AL-SN	0.63	0.21	\$6.00
4500050	LF250-1000-CTR-AL-VT	10.14	0.15	\$73.00	4000031	QF25-100-CTR-AL-SN	0.98	0.21	\$7.50
4500053	LF320-1200-CTR-AL-VT	12.28	0.21	\$124.00	4000032	QF40-150-CTR-AL-SN	1.53	0.21	\$10.50
4500056	LF400-1600-CTR-AL-VT	15.42	0.21	\$210.00	4000033	QF50-200-CTR-AL-SN	1.97	0.21	\$13.00
4500059	LF500-2000-CTR-AL-VT	19.41	0.21	\$325.00	4500034	LF63-250-CTR-AL-SN	2.65	0.15	\$31.00
Buna-N Seals					4500037	LF80-300-CTR-AL-SN	3.15	0.15	\$36.00
4000025	QF16-075-CTR-AL-BN	0.63	0.21	\$3.25	4500040	LF100-400-CTR-AL-SN	3.90	0.15	\$36.00
4000026	QF25-100-CTR-AL-BN	0.98	0.21	\$4.35	4500043	LF160-600-CTR-AL-SN	5.91	0.15	\$48.00
4000027	QF40-150-CTR-AL-BN	1.53	0.21	\$5.50	4500046	LF200-800-CTR-AL-SN	8.27	0.15	\$69.00
4000028	QF50-200-CTR-AL-BN	1.97	0.21	\$6.50	4500049	LF250-1000-CTR-AL-SN	10.14	0.15	\$76.00
4500033	LF63-250-CTR-AL-BN	2.64	0.15	\$27.00	4500052	LF320-1200-CTR-AL-SN	12.28	0.21	\$130.00
4500036	LF80-300-CTR-AL-BN	3.15	0.15	\$33.00	4500055	LF400-1600-CTR-AL-SN	15.42	0.21	\$225.00
					4500058	LF500-2000-CTR-AL-SN	19.41	0.21	\$340.00

ORDERING NOTE: Centering rings with screen mesh are available on pg. 1.24.

Adaptive Centering Ring Assembly

Three of the ISO-QF flange sizes illustrated on the table on pg. 1.9 are rarely used by modern vacuum component manufacturers within the United States. These are the ISO-QF10, QF20 and QF32. These flanges are identical to the ISO-QF16, QF25 and QF40 respectively except for the seal groove machined into the I.D. of the flange.

With our adaptive centering ring you can adapt directly from a QF10 to a QF16, QF20 to QF25 and QF32 to QF40. The connections can then be fastened with a standard clamp that corresponds with the larger of the two sizes. Adaptation to these standard sizes will greatly expand the number of components that have standard dimensions compatible with your vacuum system. This will ease your system assembly, decrease product delivery time and reduce cost.



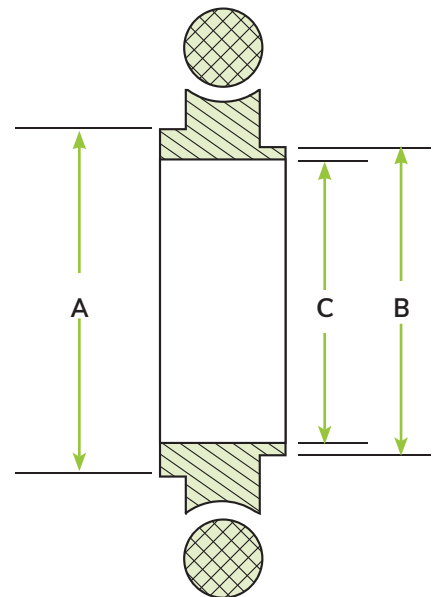
Adaptive Centering Ring Assembly

Materials:

- Centering ring: Standard: 316 stainless steel
- O-ring:
 - Standard: Viton®
 - Alternative: Buna-N or silicone (Call for price and delivery)

Product Notes:

- Metal centering ring aligns flanges during seal assembly and provides support for the elastomer, sealing ring.
- Replaceable O-ring



TEMPERATURE LIMITS

O-ring MATERIAL	LOW	SUSTAINED HIGH	INTERMITTENT USE
Viton®	-26°C	150°C	205°C
Buna	-20°C	80°C	100°C
Silicone	-50°C	150°C	200°C

Silicone is chemically resistant

Stainless Steel

PART #	REFERENCE ID	A (in)	B (in)	C (in)	UNIT PRICE
4000054	QF10/16-ACR-VT	0.70	0.47	0.39	\$9.00
4000055	QF20/25-ACR-VT	1.02	0.87	0.81	\$12.00
4000056	QF32/40-ACR-VT	1.61	1.34	1.26	\$20.00

Centering Ring Assembly with Screen

Screen Mesh Centering Ring Assemblies: These sealing assemblies are useful in many situations in which a vacuum system or instrument needs to be protected from contamination by particulate generated from outside the system or from within. The supportive metallic ring for these seals has a screen mesh insert covering the inner aperture.



Materials:

- Centering ring:
 - Standard: 304 stainless steel
- O-ring:
 - Standard: Viton®
 - Alternative: Buna-N or silicone
(Call for price and delivery)

Options: Call for price and delivery

- Larger sizes
- Mesh sizes

Product Notes:

- Metal centering ring aligns flanges during seal assembly and provides support for the elastomer, sealing ring.
- Replaceable O-ring

TEMPERATURE LIMITS			
O-ring MATERIAL	LOW	SUSTAINED HIGH	INTERMITTENT USE
Viton®	-26°C	150°C	205°C
Buna	-20°C	80°C	100°C
Silicone	-50°C	150°C	200°C

Silicone is chemically resistant

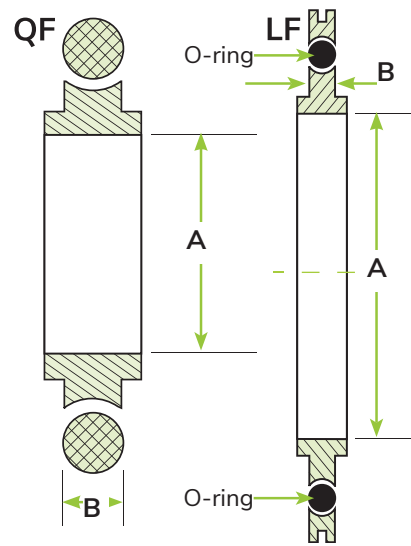


Fig. 1

Fig. 2

PART #	REFERENCE ID	FIGURE	A (in)	B (in)	UNIT PRICE
4000050	QF16-CTR-SM-VT	1	0.51	0.21	\$28.00
4000051	QF25-CTR-SM-VT	1	0.86	0.21	\$30.00
4000052	QF40-CTR-SM-VT	1	1.45	0.21	\$35.00
4000053	QF50-CTR-SM-VT	1	1.88	0.21	\$39.00
4500341	LF63-CTR-SM-VT	2	2.48	0.154	\$220.00
4500342	LF80-CTR-SM-VT	2	3.03	0.154	\$265.00
4500343	LF100-CTR-SM-VT	2	3.80	0.154	\$310.00
4500344	LF160-CTR-SM-VT	2	5.67	0.154	\$330.00

Over Pressure Ring

This centering ring accessory creates a barrier on the outer diameter of the elastomer sealing ring to prevent “blow out” due to the presence of pressures greater than 1 standard atmosphere within a vacuum system. A centering ring assembly with an over-pressure ring can withstand up to 100psi of pressure depending on the size of the flange you are using.

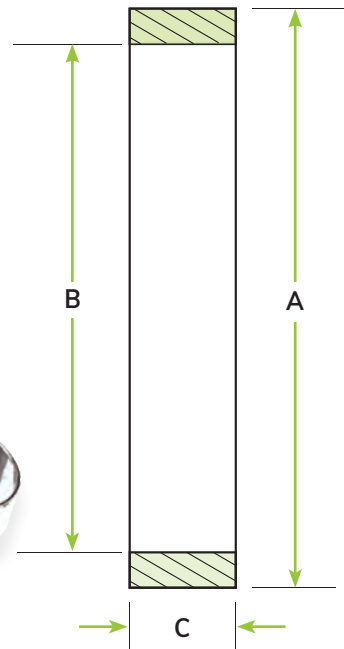
ANCORP CNC machined clamps have a built-in over-pressure ring design. With the use of these clamps there is no need for the added expense of an over-pressure ring addition to the centering ring assembly.

Materials:

- 304 stainless steel

Product Notes:

- Retains O-ring if your system is exposed to a burst of pressure



Over Pressure Ring

PART #	REFERENCE ID	MAX PSIG	MAX PSIG W/ CNC CLAMP	A (in)	B (in)	C (in)	UNIT PRICE
4000073	QF16-075-OPR	100	300	1.25	1.19	0.35	\$8.00
4000074	QF25-100-OPR	100	250	1.66	1.58	0.35	\$8.50
4000075	QF40-150-OPR	75	200	2.25	2.17	0.35	\$9.50
4000076	QF50-200-OPR	50	-	2.75	2.62	0.15	\$11.00

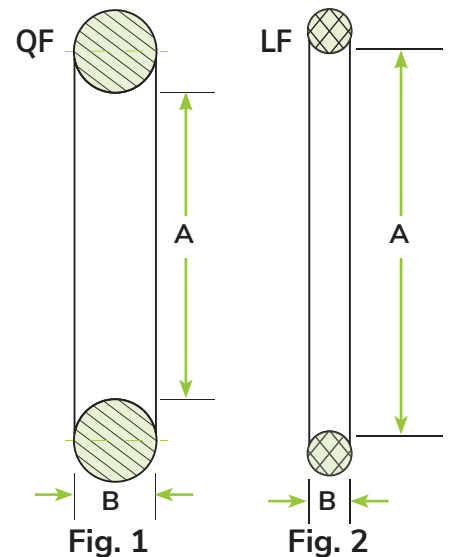
Replacement Viton® O-ring

Product Notes:

- Replacement seal for ISO centering rings
- Temperature limits:
Low: -26°C
Sustained High: 150°C
Intermittent Use: 205°C



PART #	REFERENCE ID	USE WITH FLANGE	FIG.	O-RING STD#	A (in)	B (in)	UNIT PRICE
0600312	2-312-OV	QF10	1	2-312	0.60	0.21	\$3.50
0600314	2-314-OV	QF16	1	2-314	0.73	0.21	\$3.50
0600320	2-320-OV	QF25	1	2-320	1.10	0.21	\$3.50
0600326	2-326-OV	QF40	1	2-326	1.60	0.21	\$4.50
0600330	2-330-OV	QF50	1	2-330	2.10	0.21	\$5.50
0600336	2-336-OV	LF63	2	2-336	2.85	0.21	\$9.00
0600340	2-340-OV	LF80	2	2-340	3.35	0.21	\$12.50
0600346	2-346-OV	LF100	2	2-346	4.10	0.21	\$21.00
0600361	2-361-OV	LF160	2	2-361	5.98	0.21	\$27.00
0600371	2-371-OV	LF200	2	2-371	8.48	0.21	\$30.00
0600378	2-378-OV	LF250	2	2-378	10.48	0.21	\$36.00
0600454	2-454-OV	LF320	2	2-454	12.48	0.28	\$44.00
0600460	2-460-OV	LF400	2	2-460	15.48	0.28	\$47.00
0600468	2-468-OV	LF500	2	2-468	19.46	0.28	\$61.00



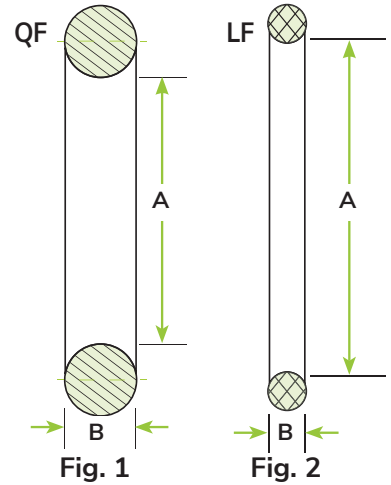
Replacement Silicone O-rings

Product Notes:

- Replacement seal for ISO centering rings
- Used in chemical processes
- Temperature limits:
 Low: -50°C
 Sustained High: 150°C
 Intermittent Use: 200°C



PART #	REFERENCE ID	USE WITH FLANGE	FIG.	O-RING STD#	A (in)	B (in)	UNIT PRICE
0602312	2-312-OS	QF10	1	2-312	0.60	0.21	\$1.50
0602314	2-314-OS	QF16	1	2-314	0.73	0.21	\$1.50
0602320	2-320-OS	QF25	1	2-320	1.10	0.21	\$2.00
0602326	2-326-OS	QF40	1	2-326	1.60	0.21	\$2.50
0602330	2-330-OS	QF50	1	2-330	2.10	0.21	\$2.50
0602336	2-336-OS	LF63	2	2-336	2.85	0.21	\$3.50
0602340	2-340-OS	LF80	2	2-340	3.35	0.21	\$4.00
0602346	2-346-OS	LF100	2	2-346	4.10	0.21	\$4.50
0602361	2-361-OS	LF160	2	2-361	5.98	0.21	\$8.00
0602371	2-371-OS	LF200	2	2-371	8.48	0.21	\$10.00
0602378	2-378-OS	LF250	2	2-378	10.48	0.21	\$11.00
0602454	2-454-OS	LF320	2	2-454	12.48	0.28	\$20.00
0602460	2-460-OS	LF400	2	2-460	15.48	0.28	\$22.00
0602468	2-468-OS	LF500	2	2-468	19.46	0.28	\$27.00



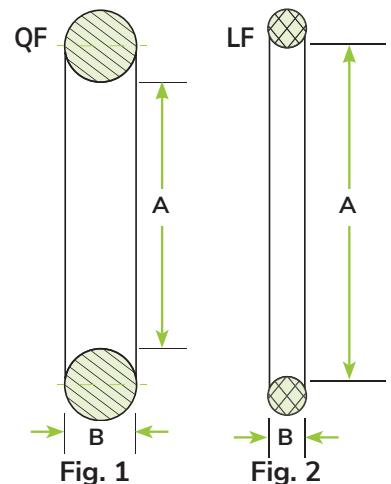
Replacement Buna-N O-rings

Product Notes:

- Replacement seal for ISO centering rings
- Temperature limits:
 Low: -20°C
 Sustained High: 80°C
 Intermittent Use: 100°C



PART #	REFERENCE ID	USE WITH FLANGE	FIG.	O-RING STD#	A (in)	B (in)	UNIT PRICE
0601312	2-312-OB	QF10	1	2-312	0.60	0.21	\$1.50
0601314	2-314-OB	QF16	1	2-314	0.73	0.21	\$1.50
0601320	2-320-OB	QF25	1	2-320	1.10	0.21	\$2.50
0601326	2-326-OB	QF40	1	2-326	1.60	0.21	\$2.50
0601330	2-330-OB	QF50	1	2-330	2.10	0.21	\$2.50
0601336	2-336-OB	LF63	2	2-336	2.85	0.21	\$2.50
0601340	2-340-OB	LF80	2	2-340	3.35	0.21	\$2.50
0601346	2-346-OB	LF100	2	2-346	4.10	0.21	\$2.50
0601361	2-361-OB	LF160	2	2-361	5.98	0.21	\$3.50
0601371	2-371-OB	LF200	2	2-371	8.48	0.21	\$5.00
0601378	2-378-OB	LF250	2	2-378	10.48	0.21	\$6.50
0601454	2-454-OB	LF320	2	2-454	12.48	0.28	\$13.50
0601460	2-460-OB	LF400	2	2-460	15.48	0.28	\$19.00
0601468	2-468-OB	LF500	2	2-468	19.46	0.28	\$25.00



Replacement Viton® O-rings (10-Pack)

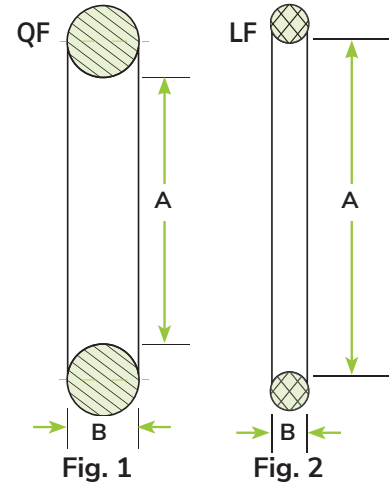
Product Notes:

- Replacement seal for ISO centering rings
- Temperature limits:
Low: -26°C
Sustained High: 150°C
Intermittent Use: 205°C



Replacement O-rings

PART #	REFERENCE ID	USE WITH FLANGE	FIG.	O-RING STD#	A (in)	B (in)	UNIT PRICE
0610312	2-312-OV-10	QF10	1	2-312	0.60	0.21	\$24.50
0610314	2-314-OV-10	QF16	1	2-314	0.73	0.21	\$24.50
0610320	2-320-OV-10	QF25	1	2-320	1.10	0.21	\$24.50
0610326	2-326-OV-10	QF40	1	2-326	1.60	0.21	\$31.50
0610330	2-330-OV-10	QF50	1	2-330	2.10	0.21	\$38.50
0610336	2-336-OV-10	LF63	2	2-336	2.85	0.21	\$63.00
0610340	2-340-OV-10	LF80	2	2-340	3.35	0.21	\$87.50
0610346	2-346-OV-10	LF100	2	2-346	4.10	0.21	\$147.00
0610361	2-361-OV-10	LF160	2	2-361	5.98	0.21	\$189.00
0610371	2-371-OV-10	LF200	2	2-371	8.48	0.21	\$210.00
0610378	2-378-OV-10	LF250	2	2-378	10.48	0.21	\$252.00
0610454	2-454-OV-10	LF320	2	2-454	12.48	0.28	\$308.00
0610460	2-460-OV-10	LF400	2	2-460	15.48	0.28	\$329.00
0610468	2-468-OV-10	LF500	2	2-468	19.46	0.28	\$427.00



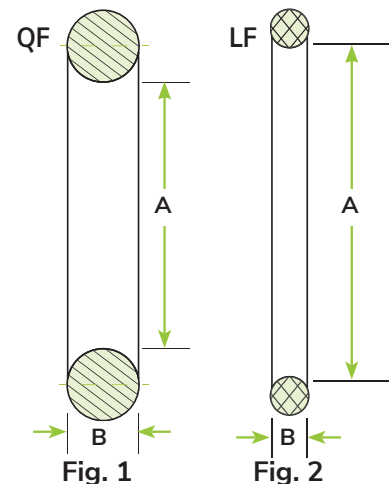
Replacement Silicone O-rings (10-Pack)

Product Notes:

- Replacement seal for ISO centering rings
- Used in chemical processes
- Temperature limits:
Low: -50°C
Sustained High: 150°C
Intermittent Use: 200°C



PART #	REFERENCE ID	USE WITH FLANGE	FIG.	O-RING STD#	A (in)	B (in)	UNIT PRICE
0612312	2-312-OS-10	QF10	1	2-312	0.60	0.21	\$10.50
0612314	2-314-OS-10	QF16	1	2-314	0.73	0.21	\$10.50
0622320	2-320-OS-10	QF25	1	2-320	1.10	0.21	\$14.00
0622326	2-326-OS-10	QF40	1	2-326	1.60	0.21	\$17.50
0612330	2-330-OS-10	QF50	1	2-330	2.10	0.21	\$17.50
0612336	2-336-OS-10	LF63	2	2-336	2.85	0.21	\$24.50
0612340	2-340-OS-10	LF80	2	2-340	3.35	0.21	\$28.00
0612346	2-346-OS-10	LF100	2	2-346	4.10	0.21	\$31.50
0612361	2-361-OS-10	LF160	2	2-361	5.98	0.21	\$56.00
0612371	2-371-OS-10	LF200	2	2-371	8.48	0.21	\$70.00



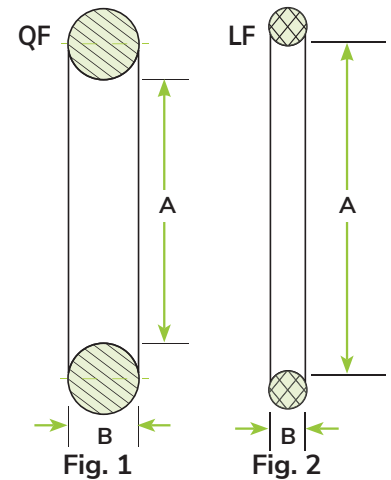
Replacement Buna-N O-rings (10-Pack)



Product Notes:

- Replacement seal for ISO centering rings
- Temperature limits:
 Low: -20°C
 Sustained High: 80°C
 Intermittent Use: 100°C

PART #	REFERENCE ID	USE WITH FLANGE	FIG.	O-RING STD#	A (in)	B (in)	UNIT PRICE
0611312	2-312-OB-10	QF10	1	2-312	0.60	0.21	\$10.50
0611314	2-314-OB-10	QF16	1	2-314	0.73	0.21	\$10.50
0611320	2-320-OB-10	QF25	1	2-320	1.10	0.21	\$17.50
0621326	2-326-OB-10	QF40	1	2-326	1.60	0.21	\$17.50
0621330	2-330-OB-10	QF50	1	2-330	2.10	0.21	\$17.50
0611336	2-336-OB-10	LF63	2	2-336	2.85	0.21	\$17.50
0611340	2-340-OB-10	LF80	2	2-340	3.35	0.21	\$17.50
0611346	2-346-OB-10	LF100	2	2-346	4.10	0.21	\$17.50
0611361	2-361-OB-10	LF160	2	2-361	5.98	0.21	\$24.50
0611371	2-371-OB-10	LF200	2	2-371	8.48	0.21	\$35.00
0611378	2-378-OB-10	LF250	2	2-378	10.48	0.21	\$45.50
0611454	2-454-OB-10	LF320	2	2-454	12.48	0.28	\$94.50
0611460	2-460-OB-10	LF400	2	2-460	15.48	0.28	\$133.00
0611468	2-468-OB-10	LF500	2	2-468	19.46	0.28	\$175.00



ISO Weld Flanges

ANCORP manufactures ISO flanges for our own use as we manufacture modular fittings (tee's, elbows and nipples) valves, feedthroughs, chambers and other components. We offer these same flanges for those customers that have in-house welding capabilities and desire to customize their system or components themselves. These flanges are manufactured to ISO specifications to ensure 100% compatibility with other ISO manufacturer's flanges.

Specifications:

- High vacuum rated to 1×10^{-8} Torr
- Bakeable to 200°C
- Materials: 304 or aluminum
- Compatible with all ISO standard vacuum flanges and fittings

Features:

- Reusable seals
- Sexless interface
- Infinitely rotatable
- Quick sealing and disassembly
- Ease installation
- Variety of fastening options
- Self-centering supportive ring
- Imperial and metric sizes available



ISO Weld Flanges

Weld Flanges

These flanges are manufactured with a weld prep and tubing bore for immediate installation on your system with no additional alteration.

ANCORP offers weld flanges in 304 stainless steel or 6061 aluminum.

These flanges are also offered in four different designs to meet your specific requirements:

- Bored flanges
- Ring flanges
- Socket weld flanges
- Stub weld flanges

See Page 1.4-1.5 for sizes and specification details



Blank Flanges

Blank flanges are manufactured with no weld prep and no tubing bore. They are commonly used to close unused ports or they are altered by customers with their own custom machining capability for a special use.

ANCORP offers blank flanges in 304 stainless steel or 6061 aluminum.



Unbored Stub Flanges

Unbored stub flanges are manufactured with no weld prep and no tubing bore. They are commonly altered by customers with their own custom machining capability for a special use.

ANCORP offers weld flanges in 304 stainless steel or 6061 aluminum.



Weld Ring Flange

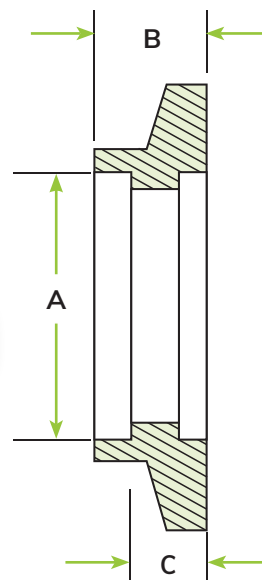
Weld ring flanges were created to offer a thin profile while still offering a weld preparation groove. This groove makes the flange self-aligning, offers greater weld joint strength and provides aesthetic coverage of the weld joint and heat discoloration that can appear after welding.

Materials:

- Standard: 304 stainless steel
- 316 stainless steel

Product Notes:

- Internal weld
- Self-aligning
- Designed to fit standard inch tubing O.D.'s
- Thinner design than standard socket weld flanges



PART #	REFERENCE ID	BORE SIZE (in)	A (in)	B (in)	C (in)	UNIT PRICE
4000077	QF16-075-RF	0.75	0.76	0.25	0.17	\$9.60
4000078	QF25-100-RF	1.00	1.01	0.25	0.17	\$9.60
4000079	QF40-150-RF	1.50	1.51	0.25	0.17	\$13.30
4000080	QF50-200-RF	2.00	2.01	0.25	0.17	\$18.00

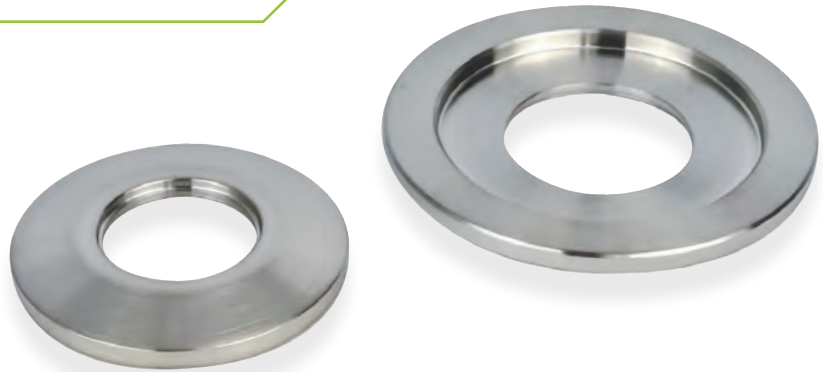
Bored Weld Flange

Materials:

- Standard: 304 stainless steel
- 316 stainless steel

Product Notes:

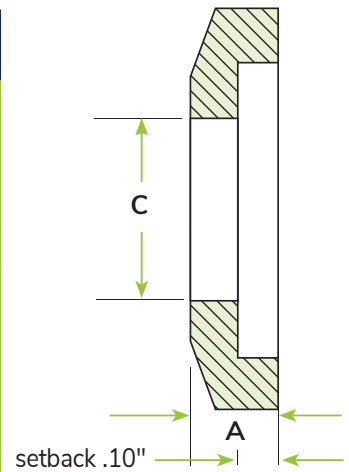
- Designed to fit standard inch tubing O.D.'s



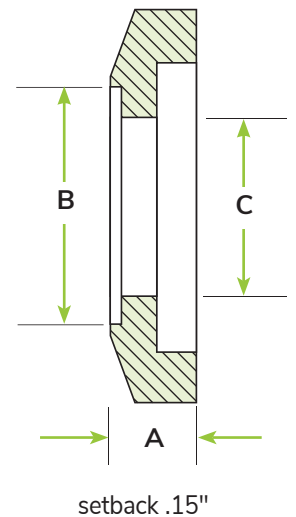
304 Stainless Steel

PART #	REFERENCE ID	BORE SIZE (in)	A (in)	B (in)	C (in)	UNIT PRICE
4000099	QF16-025-BW	0.25	0.20	-	0.26	\$8.50
4000100	QF16-038-BW	0.38	0.20	-	0.38	\$8.50
4000101	QF16-050-BW	0.50	0.20	0.51	0.45	\$9.60
4000102	QF16-075-BW	0.75	0.20	0.76	0.68	\$9.60
4000103	QF25-025-BW	0.25	0.20	-	0.26	\$9.60
4000104	QF25-038-BW	0.38	0.20	-	0.38	\$9.60
4000105	QF25-050-BW	0.50	0.20	0.51	0.45	\$9.60
4000106	QF25-075-BW	0.75	0.20	0.76	0.71	\$13.40
4000107	QF25-100-BW	1.00	0.20	1.01	0.94	\$13.40
4000108	QF40-025-BW	0.25	0.20	-	0.26	\$13.40
4000109	QF40-038-BW	0.38	0.20	-	0.38	\$13.40
4000110	QF40-050-BW	0.50	0.20	0.51	0.45	\$13.40
4000111	QF40-075-BW	0.75	0.20	0.76	0.71	\$13.40
4000112	QF40-100-BW	1.00	0.20	1.01	0.94	\$13.40
4000113	QF40-150-BW	1.50	0.20	1.51	1.44	\$14.00
4000114	QF50-025-BW	0.25	0.20	-	0.26	\$18.20
4000115	QF50-038-BW	0.38	0.20	-	0.38	\$18.20
4000116	QF50-050-BW	0.50	0.20	0.51	0.45	\$18.20
4000117	QF50-075-BW	0.75	0.20	0.76	0.71	\$18.20
4000118	QF50-100-BW	1.00	0.20	1.01	0.94	\$18.20
4000119	QF50-150-BW	1.50	0.20	1.51	1.44	\$18.20
4000120	QF50-200-BW	2.00	0.20	2.01	1.94	\$21.00

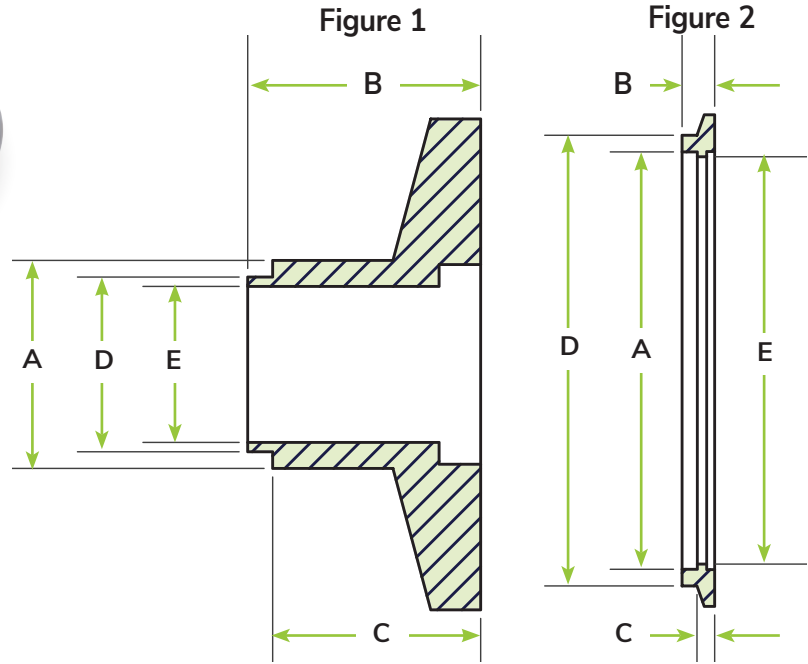
BORED SIZE:
1/4 in. & 3/8 in.



BORED SIZE:
1/2 in. THRU 2 in.



ISO-QF Socket Weld Flange



Materials:

- Standard: 304 stainless steel, 316 stainless steel

Product Notes:

- Internal weld
- Self-aligning
- Designed to fit standard inch tubing O.D.'s
- QF63-QF200 uses LF Centering Rings

304 Stainless Steel

PART #	REFERENCE ID	FIGURE	TUBE SIZE (in)	A (in)	B (in)	C (in)	D (in)	E (in)	UNIT PRICE
4000082	QF16-050-SF	1	0.50	0.50	0.56	0.50	0.42	0.375	\$9.50
4000083	QF16-075-SF	1	0.75	0.75	0.56	0.50	0.67	0.625	\$9.50
4000084	QF25-100-SF	2	1.00	1.01	0.50	0.17	1.13	0.875	\$10.00
4000085	QF40-150-SF	2	1.50	1.51	0.50	0.21	1.76	1.375	\$13.50
4000086	QF50-200-SF	2	2.00	2.01	0.63	0.23	2.25	1.875	\$20.00
4001081	QF63-250-SF	2	2.50	2.51	0.47	0.25	3.00	2.375	\$71.00
4001082	QF80-300-SF	2	3.00	3.01	0.47	0.25	3.50	2.875	\$82.00
4001083	QF100-400-SF	2	4.00	4.02	0.47	0.25	4.50	3.875	\$105.00
4001084	QF160-600-SF	2	6.00	6.02	0.47	0.25	6.50	5.875	\$115.00
4001085	QF200-800-SF	2	8.00	8.02	0.47	0.25	8.50	7.760	\$205.00

ISO-LF Socket Weld Flange

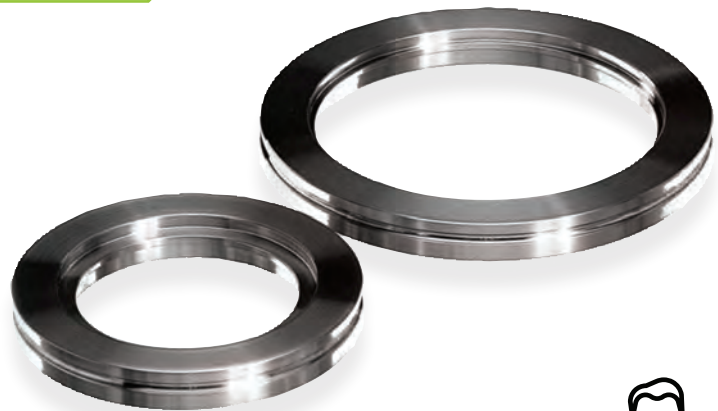
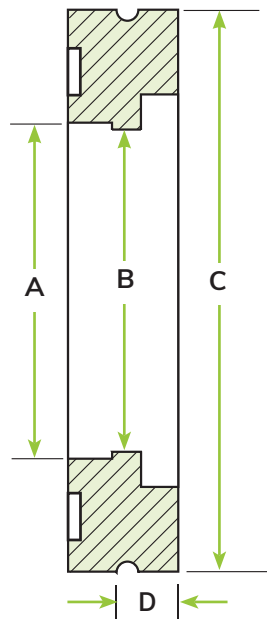
Materials:

- Standard: 304 stainless steel
- 316 stainless steel


Product Notes:

- Internal weld
- Self-aligning
- Designed to fit standard inch tubing O.D.'s

ORDERING NOTE:
See page 1.5 for bolt holes



TECH TIP



To simplify aluminum welding, **ANCORP** also offers an aluminum ISO-LF stub weld flange on page 1.35.

304 Stainless Steel

PART #	REFERENCE ID	TUBE O.D. (in)	A (in)	THRU HOLE B (in)	C (in)	SET BACK D (in)	UNIT PRICE
4500069	LF63-250-SF	2.50	2.51	2.37	3.74	0.25	\$53.00
4500070	LF80-300-SF	3.00	3.01	2.87	4.33	0.25	\$67.00
4500071	LF100-400-SF	4.00	4.01	3.87	5.12	0.25	\$72.00
4500072	LF160-600-SF	6.00	6.02	5.83	7.09	0.25	\$105.00
4500073	LF200-800-SF	8.00	8.02	7.76	9.45	0.25	\$170.00
4500074	LF250-1000-SF	10.00	10.02	9.75	11.42	0.25	\$210.00
4500181	LF320-1200-SF	12.00	12.03	12.42	14.57	0.38	\$575.00
4500075	LF320-1275-SF	12.75	12.77	12.42	14.57	0.38	\$530.00
4500076	LF400-1600-SF	16.00	16.03	15.62	17.72	0.38	CALL
4500077	LF500-2000-SF	20.00	20.04	19.62	21.65	0.38	CALL

6061 - T6 Aluminum

PART #	REFERENCE ID	TUBE O.D. (in)	A (in)	THRU HOLE B (in)	C (in)	SET BACK D (in)	UNIT PRICE
4500078	LF63-250-SF-AL	2.50	2.51	2.37	3.74	0.25	\$43.00
4500079	LF80-300-SF-AL	3.00	3.01	2.87	4.33	0.25	\$54.00
4500080	LF100-400-SF-AL	4.00	4.02	3.87	5.12	0.25	\$60.00
4500081	LF160-600-SF-AL	6.00	6.02	5.83	7.09	0.25	\$100.00
4500082	LF200-800-SF-AL	8.00	8.02	7.76	9.45	0.25	\$150.00
4500083	LF250-1000-SF-AL	10.00	10.03	9.76	11.42	0.25	\$175.00
4500084	LF320-1275-SF-AL	12.75	12.77	12.42	14.57	0.38	CALL
4500085	LF400-1600-SF-AL	16.00	16.03	15.62	17.72	0.38	CALL
4500086	LF500-2000-SF-AL	20.00	20.03	19.62	21.65	0.38	CALL
4500186	LF320-1200-SF-AL	12.00	12.03	11.88	14.57	0.38	CALL

ISO-LFB Socket Weld Flange

Materials:

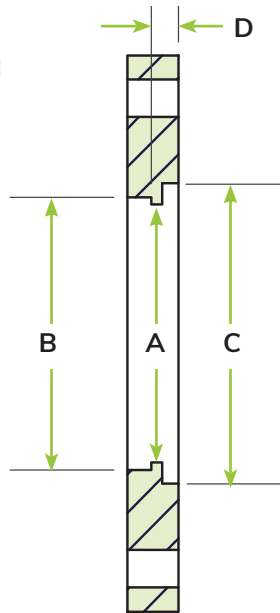
- Standard: 304 stainless steel
- Alternative: Aluminum
Call for price and delivery

Product Notes:

- Internal weld
- Self-aligning
- Designed to fit standard inch tubing O.D.'s

Options: Call for price and delivery

- Tapped bolt holes



PART #	REFERENCE ID	A (in)	B (in)	C (in)	SET BACK D (in)	UNIT PRICE
4500135	LFB63-250-SF	2.37	2.50	2.51	0.25	\$78.00
4500136	LFB80-300-SF	2.87	3.00	3.01	0.25	\$100.00
4500137	LFB100-400-SF	3.87	4.00	4.01	0.25	\$125.00
4500138	LFB160-600-SF	5.83	6.00	6.02	0.25	\$175.00
4500139	LFB200-800-SF	7.76	8.00	8.02	0.25	\$245.00
4500140	LFB250-1000-SF	9.75	10.00	10.02	0.25	\$350.00
4500183	LFB320-1200-SF	12.42	12.00	12.77	0.38	\$995.00
4500141	LFB320-1275-SF	12.42	12.75	12.77	0.38	\$695.00
4500142	LFB400-1600-SF	15.62	16.00	16.02	0.38	CALL
4500143	LFB500-2000-SF	19.62	20.00	20.02	0.38	CALL

ISO-QF Stub Weld Flange

Materials:

- Standard: 304 stainless steel
- 6061 aluminum

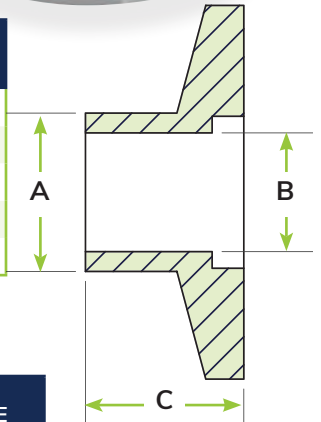
Product Notes:

- Butt weld
- Designed to fit standard inch tubing O.D.'s



304 Stainless Steel

PART #	REFERENCE ID	TUBE SIZE (in)	A (in)	B (in)	C (in)	UNIT PRICE
4000122	QF16-050-HNM-0.50	0.50	0.50	0.375	0.50	\$9.50
4000123	QF16-075-HNM-0.50	0.75	0.75	0.625	0.50	\$9.50
4000124	QF25-100-HNM-0.50	1.00	1.00	0.875	0.50	\$11.00
4000125	QF40-150-HNM-0.75	1.50	1.50	1.375	0.75	\$14.00
4000126	QF50-200-HNM-0.75	2.00	2.00	1.875	0.75	\$20.00



6061 - T6 Aluminum

PART #	REFERENCE ID	TUBE SIZE (in)	A (in)	B (in)	C (in)	UNIT PRICE
4000128	QF16-050-HNM-0.50-AL	0.50	0.50	0.375	0.50	\$8.00
4000129	QF16-075-HNM-0.50-AL	0.75	0.75	0.625	0.50	\$8.00
4000130	QF25-100-HNM-0.50-AL	1.00	1.00	0.875	0.50	\$8.50
4000131	QF40-150-HNM-0.75-AL	1.50	1.50	1.375	0.75	\$11.00
4000132	QF50-200-HNM-0.75-AL	2.00	2.00	1.875	0.75	\$17.50

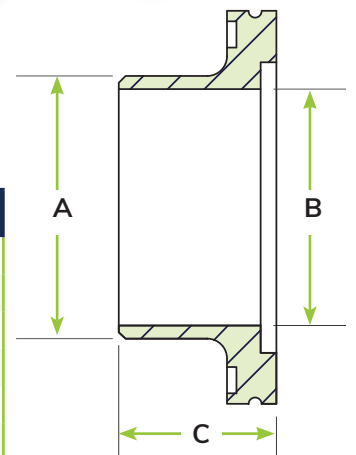
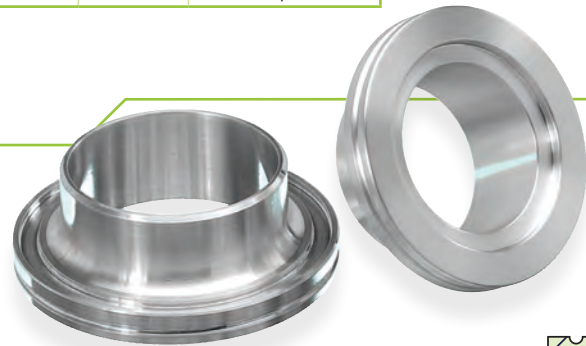
ISO-LF Stub Weld Flange

Materials:

- Standard: 6061 aluminum
- Alternative: 304 stainless steel
- Call for price and delivery

Product Notes:

- Butt weld
- Designed to fit standard inch tubing O.D.'s
- Machined from solid bar - No welds



PART #	REFERENCE ID	A (in)	B (in)	C (in)	UNIT PRICE
4500128	LF63-250-HNM-1.50-AL	2.50	2.25	1.50	\$56.00
4500129	LF80-300-HNM-1.50-AL	3.00	2.75	1.50	\$70.00
4500130	LF100-400-HNM-1.50-AL	4.00	3.75	1.50	\$73.00
4500131	LF160-600-HNM-1.50-AL	6.00	5.75	1.50	\$105.00
4500132	LF200-800-HNM-1.50-AL	8.00	7.76	1.50	\$170.00
4500133	LF250-1000-HNM-1.50-AL	10.00	9.75	1.50	\$225.00

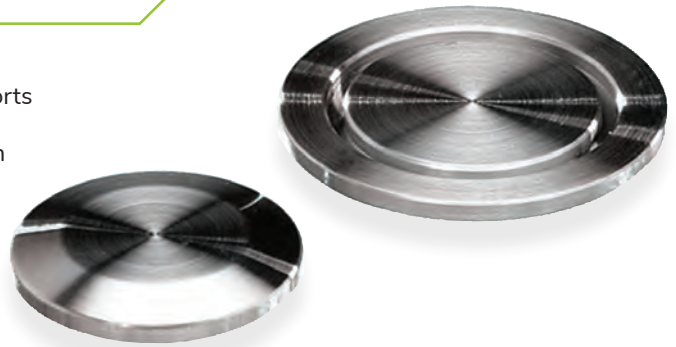
ISO-QF Blank Flange

Materials:

- Standard:
304 stainless steel
6061 aluminum
- Alternative:
316 stainless steel

Product Notes:

- Close off unused ports
- Good choice for custom modification



304 Stainless Steel

PART #	REFERENCE ID	FIG.	A (in)	UNIT PRICE
4000160	QF16-000	1	0.20	\$8.00
4000161	QF25-000	1	0.20	\$8.50
4000162	QF40-000	1	0.20	\$14.00
4000163	QF50-000	1	0.20	\$17.00
4001091	QF63-000	2	0.47	\$60.00
4001092	QF80-000	2	0.47	\$71.00
4001093	QF100-000	2	0.47	\$93.00
4001094	QF160-000	2	0.47	\$105.00
4001095	QF200-000	2	0.47	\$195.00

6061 Aluminum

PART #	REFERENCE ID	FIG.	A (in)	UNIT PRICE
4000165	QF16-000-AL	1	0.20	\$5.50
4000166	QF25-000-AL	1	0.20	\$6.00
4000167	QF40-000-AL	1	0.20	\$10.50
4000168	QF50-000-AL	1	0.20	\$11.00

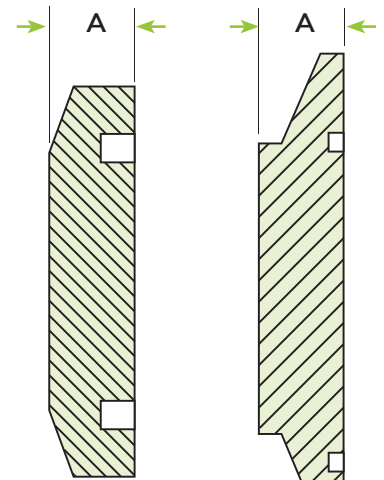


FIGURE 1

FIGURE 2



ISO-LF Blank Flanges

ISO-LF Blank Flange

304 Stainless Steel

PART #	REFERENCE ID	A (in)	B (in)	UNIT PRICE
4500087	LF63-000	3.74	0.47	\$53.00
4500088	LF80-000	4.33	0.47	\$72.00
4500089	LF100-000	5.12	0.47	\$78.00
4500090	LF160-000	7.09	0.47	\$105.00
4500091	LF200-000	9.45	0.47	\$175.00
4500092	LF250-000	11.42	0.47	\$230.00
4500093	LF320-000	14.57	0.67	\$575.00
4500094	LF400-000	17.72	0.67	CALL
4500095	LF500-000	21.65	0.67	CALL

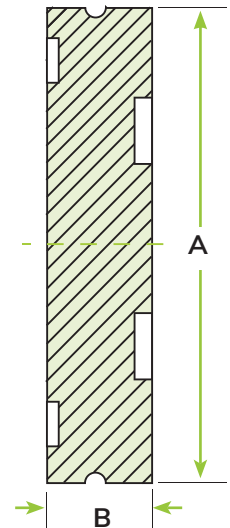


Materials:

- Standard: 304 stainless steel
- 6061 aluminum

Product Notes:

- Close off unused ports
- Good choice for custom modification



6061 Aluminum

PART #	REFERENCE ID	A (in)	B (in)	UNIT PRICE
4500096	LF63-000-AL	3.74	0.47	\$43.00
4500097	LF80-000-AL	4.33	0.47	\$56.00
4500098	LF100-000-AL	5.12	0.47	\$63.00
4500099	LF160-000-AL	7.09	0.47	\$85.00
4500100	LF200-000-AL	9.45	0.47	\$138.00
4500101	LF250-000-AL	11.42	0.47	\$175.00
4500102	LF320-000-AL	14.57	0.67	\$330.00
4500103	LF400-000-AL	17.72	0.67	CALL
4500104	LF500-000-AL	21.65	0.67	CALL

ISO-QF Unbored Stub Flange

304 Stainless Steel

PART #	REFERENCE ID	A (in)	B (in)	UNIT PRICE
4000175	QF16-000-US	0.75	0.75	\$12.00
4000176	QF25-000-US	1.00	0.75	\$13.50
4000177	QF40-000-US	1.50	1.00	\$19.50
4000178	QF50-000-US	2.00	1.00	\$26.00

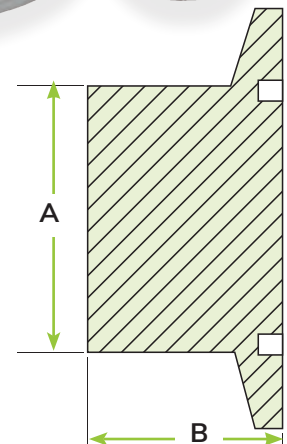


Materials:

- Standard: 304 stainless steel
- 6061 aluminum

Product Notes:

- Good choice for custom modification



6061 - T6 Aluminum

PART #	REFERENCE ID	A (in)	B (in)	UNIT PRICE
4000180	QF16-000-US-AL	0.75	0.75	\$9.50
4000181	QF25-000-US-AL	1.00	0.75	\$10.50
4000182	QF40-000-US-AL	1.50	1.00	\$15.50
4000183	QF50-000-US-AL	2.00	1.00	\$21.00

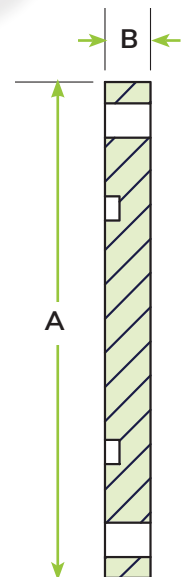
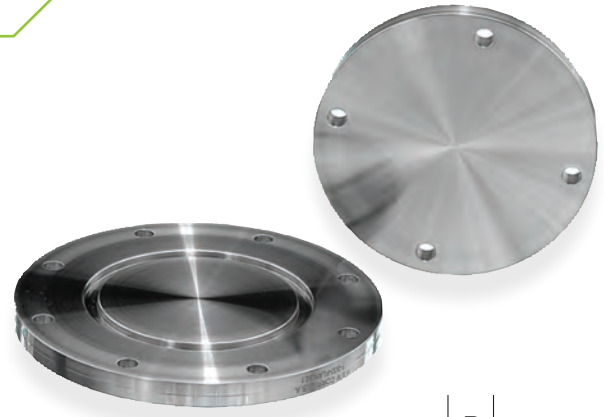
ISO-LFB Blank Flange

304 Stainless Steel

PART #	REFERENCE ID	A (in)	B (in)	UNIT PRICE
4500144	LFB63-000	5.12	0.47	\$78.00
4500145	LFB80-000	5.71	0.47	\$114.00
4500146	LFB100-000	6.50	0.47	\$125.00
4500147	LFB160-000	8.86	0.63	\$240.00
4500148	LFB200-000	11.22	0.63	\$300.00
4500149	LFB250-000	13.19	0.63	\$445.00
4500150	LFB320-000	16.73	0.79	\$800.00
4500151	LFB400-000	20.08	0.79	CALL
4500152	LFB500-000	24.02	0.79	CALL

6061 - T6 Aluminum

PART #	REFERENCE ID	A (in)	B (in)	UNIT PRICE
4500153	LFB63-000-AL	5.12	0.47	\$64.00
4500154	LFB80-000-AL	5.71	0.47	\$80.00
4500155	LFB100-000-AL	6.50	0.47	\$95.00
4500156	LFB160-000-AL	8.86	0.63	\$160.00
4500157	LFB200-000-AL	11.22	0.63	\$175.00
4500158	LFB250-000-AL	13.19	0.63	\$268.00
4500159	LFB320-000-AL	16.73	0.79	\$550.00
4500160	LFB400-000-AL	20.08	0.79	CALL
4500161	LFB500-000-AL	24.02	0.79	CALL



Materials:

- Standard:
304 stainless steel
6061 aluminum

Product Note:

- Close off unused ports
- Good choice for custom modification

Options:

- Call for price and delivery
- Tapped bolt holes

ISO Fittings

ANCORP's ISO fittings make up a complete set of modular components that allow our customers to create a custom vacuum system without the trouble and expense of having in-house machining and welding capabilities.

All ANCORP's ISO QF and LF fittings are made with flanges manufactured to ISO specifications to ensure 100% compatibility with other manufacturer's flanges.



ISO Fittings

Specifications:

- High vacuum rated to 1×10^{-8} Torr
- Bakeable to 200°C
- Materials: 304 stainless steel or aluminum
- Compatible with all ISO standard vacuum flanges and fittings

Features:

- Reusable seals
- Sexless interface
- Infinitely rotatable
- Quick sealing and disassembly
- Easy installation
- Variety of fastening options
- Self-centering supportive ring
- Imperial and metric sizes available

Half Nipple



These fittings are manufactured with a flange on one end and raw tubing on the other. Half nipples are often welded onto a custom vacuum system or instrument by a customer with in-house welding capabilities. However, these fittings can also be used with quick connect compression fittings to make a vacuum tight connection without welding. ANCORP manufactures vacuum half nipples in 304 stainless steel and aluminum.

Nipples



These fittings are manufactured with an ISO flange on each end of a straight section of tubing.

Nipples are used to create a weld free straight connection within a vacuum system. Nipples are also used to as straight adapters between different tubing sizes or flange types. These fittings are available in all ISO sizes and flange types. ANCORP manufactures vacuum nipples in 304 stainless steel, aluminum, and flexible stainless steel.

Elbows



These fittings are manufactured with a flange on each end of a curved section of tubing. Elbows accommodate turns or alignment considerations for vacuum system design. Elbows are offered in five designs; 45° radius elbow, 90° radius elbow, 90° mitered elbow, 90° tangent radius elbow and 180° radius elbow to accommodate a wide variety of system configurations. **ANCORP** manufactures vacuum elbows in 304 stainless steel and aluminum.

Tees



These fittings are manufactured with a flange on each end of a “T” shaped section of tubing. Tees accommodate junctions or alignment considerations for vacuum system design. Tees are also used as junction adapters between different tubing sizes or flange types. These fittings are available in all ISO sizes and flange types. **ANCORP** manufactures vacuum tees in 304 stainless steel and aluminum.

Crosses



These fittings are manufactured with a flange on each end of an “X” shaped section of tubing. Crosses accommodate junctions or alignment considerations for vacuum system design. Crosses are also used as junction adapters between different tubing sizes or flange types. These fittings are available in all ISO sizes and flange types. **ANCORP** manufactures vacuum crosses in 304 stainless steel and aluminum.

5 or 6 Way Crosses



These fittings are manufactured with a flange on each end of a 5 or 6 sided tubing junction. Crosses accommodate complex junctions or alignment considerations for vacuum system design. Larger sizes are sometimes used as the starting point of a simple vacuum chamber design. **ANCORP** manufactures 5 and 6-way vacuum crosses in 304 stainless steel and aluminum.

ISO-QF Half Nipple-Machined

Materials:

- Standard: 304 stainless steel
- Alternative:
316 stainless steel
6061 aluminum

Product Notes:

- Butt weld
- Designed to fit standard inch tubing O.D.'s
- Machined from solid bar – No welds



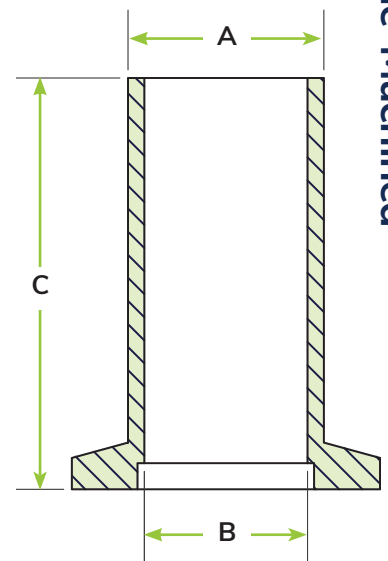
ISO-QF Half Nipple-Machined

304 Stainless Steel

PART #	REFERENCE ID	TUBE SIZE (in)	A (in)	B (in)	C (in)	UNIT PRICE
4000134	QF16-050-HNM-1.58	0.50	0.50	0.38	1.58	\$14.00
4000135	QF16-075-HNM-1.58	0.75	0.75	0.63	1.58	\$14.50
4000136	QF25-100-HNM-1.58	1.00	1.00	0.88	1.58	\$17.00
4000137	QF40-150-HNM-1.58	1.50	1.50	1.38	1.58	\$19.00
4000138	QF50-200-HNM-1.58	2.00	2.00	0.065	1.58	\$30.00

6061 Aluminum

PART #	REFERENCE ID	TUBE SIZE (in)	A (in)	B (in)	C (in)	UNIT PRICE
4000144	QF16-050-HNM-1.58-AL	0.50	0.50	0.38	1.58	\$11.50
4000145	QF16-075-HNM-1.58-AL	0.75	0.75	0.63	1.58	\$11.50
4000146	QF25-100-HNM-1.58-AL	1.00	1.00	0.88	1.58	\$14.00
4000147	QF40-150-HNM-1.58-AL	1.50	1.50	1.38	1.58	\$15.50
4000148	QF50-200-HNM-1.58-AL	2.00	2.00	1.875	1.58	\$24.00



ISO-QF Half Nipple-Welded

Materials:

- Standard: 304 stainless steel
- Alternative: 6061 aluminum (Call for price and delivery)

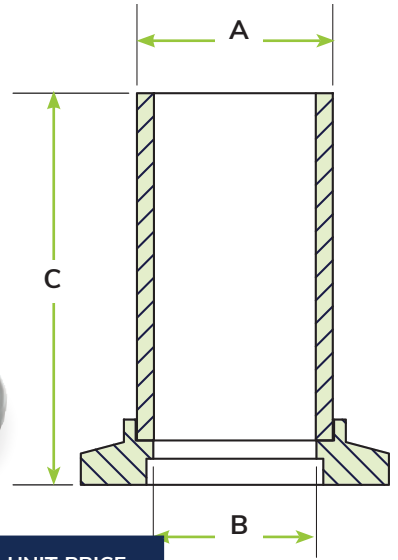
Product Notes:

- Butt weld
- Designed to fit standard inch tubing O.D.'s
- Highly customizable

Options:

(Call for price and delivery)

- Custom lengths
- ISO-QF large size flanges see pg. 1.5



PART #	REFERENCE ID	TUBE SIZE (in)	A (in)	B (in)	C (in)	UNIT PRICE
4000139	QF16-075-HN-1.50	0.75	0.75	0.63	1.50	\$14.00
4000140	QF25-100-HN-2.04	1.00	1.00	0.88	2.04	\$15.50
4000141	QF40-150-HN-2.46	1.50	1.50	1.38	2.46	\$19.00
4000142	QF50-200-HN-3.21	2.00	2.00	1.88	3.21	\$30.00

ISO-LF Half Nipple

Materials:

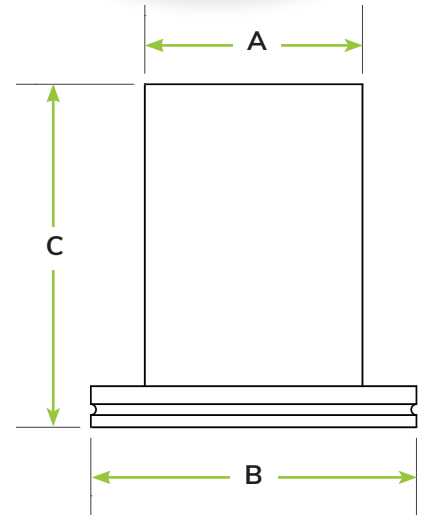
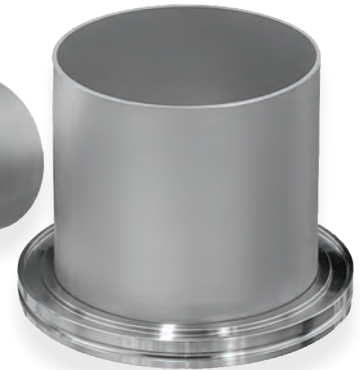
- Standard: 304 stainless steel

Product Notes:

- Butt weld
- Designed to fit standard inch tubing O.D.'s
- Highly Customizable

Options: (Call for price and delivery)

- Custom lengths
- ISO-QF large size flanges see pg. 1.5
- Alternative: 6061 aluminum



304 stainless steel

PART #	REFERENCE ID	A (in)	B (in)	C (in)	UNIT PRICE
4500110	LF63-250-HN-3.94	2.50	3.94	3.74	\$89.00
4500111	LF80-300-HN-3.94	3.00	3.94	4.33	\$100.00
4500112	LF100-400-HN-3.94	4.00	3.94	5.12	\$120.00
4500113	LF160-600-HN-3.94	6.00	3.94	7.09	\$155.00
4500114	LF200-800-HN-3.94	8.00	3.94	9.45	\$245.00
4500115	LF250-1000-HN-3.94	10.00	3.94	11.42	\$315.00
4500182	LF320-1200-HN-3.94	12.00	3.94	14.57	\$1,200.00
4500116	LF320-1275-HN-3.94	12.75	3.94	14.57	\$1,100.00
4500117	LF400-1600-HN-3.94	16.00	3.94	17.72	CALL
4500118	LF500-2000-HN-3.94	20.00	3.94	21.65	CALL

ISO-LFB Half Nipple

Materials:

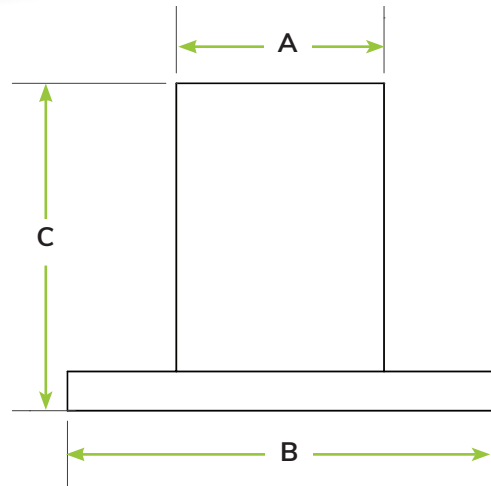
- Standard:
 - 304 stainless steel
 - 316 stainless steel
 - 6061 aluminum

Product Notes:

- Butt weld
- Designed to fit standard inch tubing O.D.'s
- Highly Customizable

Options: (Call for price and delivery)

- Custom lengths
- Tapped bolt holes
- ISO-QF large size flanges see pg. 1.5



ISO-LFB Half Nipple

PART #	REFERENCE ID	A (in)	B (in)	C (in)	UNIT PRICE
4500162	LFB63-250-HN-3.94	2.50	5.12	3.94	\$120.00
4500163	LFB80-300-HN-3.94	3.00	5.71	3.94	\$145.00
4500164	LFB100-400-HN-3.94	4.00	6.50	3.94	\$175.00
4500165	LFB160-600-HN-3.94	6.00	8.86	3.94	\$240.00
4500166	LFB200-800-HN-3.94	8.00	11.22	3.94	\$385.00
4500167	LFB250-1000-HN-3.94	10.00	13.19	3.94	\$550.00
4500188	LFB320-1200-HN-3.94	12.00	16.73	3.94	\$1,450.00
4500168	LFB320-1275-HN-3.94	12.75	16.73	3.94	\$1,170.00
4500169	LFB400-1600-HN-3.94	16.00	20.08	3.94	CALL
4500170	LFB500-2000-HN-3.94	20.00	24.02	3.94	CALL

ISO-QF Nipple

Materials:

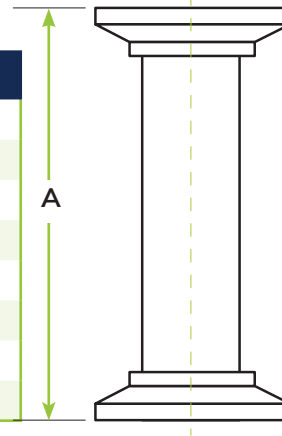
- Standard: 304 stainless steel
- Alternative: 6061 aluminum (Call for price and delivery)

Options:

(Call for price and delivery)

- Custom lengths
- Custom flange combinations
- ISO-QF large size flanges see pg. 1.5

PART #	REFERENCE ID	A (in)	UNIT PRICE
4000406	QF16-075-N-3.15	3.15	\$40.00
4000408	QF16-075-N-12.60	12.60	\$48.00
4000410	QF25-100-N-3.94	3.94	\$46.00
4000412	QF25-100-N-12.60	12.60	\$54.00
4000414	QF40-150-N-5.12	5.12	\$57.00
4000416	QF40-150-N-12.60	12.60	\$68.00
4000418	QF50-200-N-5.51	5.51	\$69.00
4000420	QF50-200-N-12.60	12.60	\$78.00



ISO-QF Flexible Nipple

Materials:

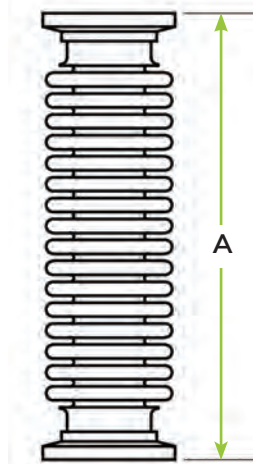
- Flanges
 - 304 stainless steel
- Flexible hose
 - 321 stainless steel

Product Notes:

- Corrects misaligned connections

Options: (Call for price and delivery)

- Custom lengths
- Custom flange combination
- ISO-QF large size flanges see pg. 1.5



PART #	REFERENCE ID	HOSE I.D. (in)	WALL THICKNESS (in)	A (in)	UNIT PRICE
0800000	QF16-075-B-4.0	0.75	0.006	4.00	\$70.00
0800001	QF25-100-B-4.0	1.00	0.006	4.00	\$75.00
0800002	QF40-150-B-4.0	1.50	0.006	4.00	\$120.00
0800003	QF50-200-B-4.0	2.00	0.006	4.00	\$110.00

ISO-LF Nipple

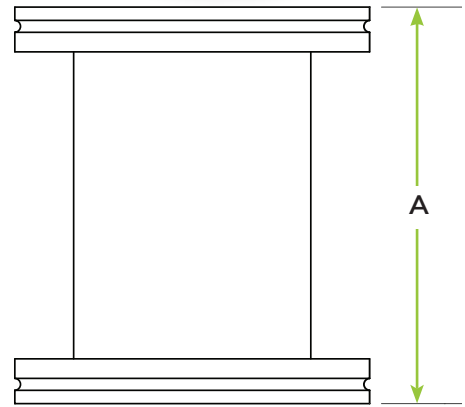
Materials:

- Standard: 304 stainless steel
- Alternative: 6061 aluminum
(Call for price and delivery)

Options:

(Call for price and delivery)

- Custom lengths
- Custom flange combinations
- ISO-QF large size flanges
see pg. 1.5
- ISO-LFB flanges
- Tapped bolt holes



PART #	REFERENCE ID	A (in)	UNIT PRICE
4500207	LF63-250-N-4.18	4.18	\$200.00
4500208	LF63-250-N-6.92	6.92	\$210.00
4500209	LF80-300-N-4.18	4.18	\$240.00
4500210	LF80-300-N-7.72	7.72	\$250.00
4500211	LF100-400-N-4.18	4.18	\$255.00
4500212	LF100-400-N-8.50	8.50	\$265.00
4500213	LF160-600-N-4.18	4.18	\$395.00
4500214	LF160-600-N-10.86	10.86	\$415.00
4500215	LF200-800-N-4.18	4.18	\$525.00
4500216	LF200-800-N-13.22	13.22	\$540.00
4500217	LF250-1000-N-4.18	4.18	\$705.00
4500218	LF250-1000-N-16.38	16.38	\$740.00
4500219	LF320-1200-N-19.76	19.76	CALL
4500220	LF400-1600-N-20.76	20.76	CALL
4500221	LF500-2000-N-21.76	21.76	CALL

ISO-LF Flexible Nipple

Materials

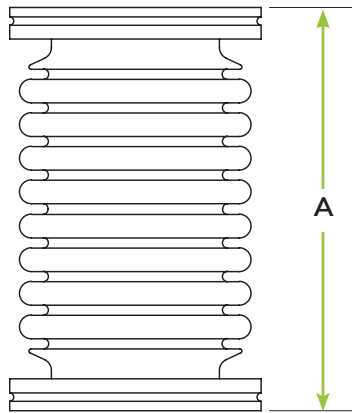
- Flanges: 304 stainless steel
- Flexible hose: 321 stainless steel

Product Notes

- Corrects misaligned connections

Options: (Call for price and delivery)

- Larger sizes
- Custom lengths
- Custom flange combination
- ISO-QF large size flanges see pg. 1.5



PART #	REFERENCE ID	WALL THICKNESS (in)	HOSE I.D. (in)	A (in)	UNIT PRICE
0800069	LF63-250-B-6.0	0.008	2.50	6.00	\$270.00
0800070	LF80-300-B-6.0	0.008	3.00	6.00	\$310.00
0800071	LF100-400-B-6.0	0.010	4.00	6.00	\$370.00
0800072	LF160-600-B-8.0	0.012	6.00	8.00	\$550.00

ISO-QF to QF Straight Reducer Nipple

Materials:

- Standard: 304 stainless steel
- Alternative: 6061 aluminum (Call for price and delivery)

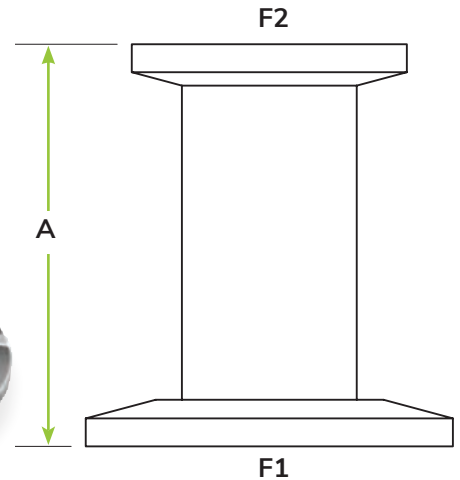
Product Notes:

- Connects different ISO-QF sizes

Options:

(Call for price and delivery)

- Custom lengths
- Custom flange combinations
- ISO-QF large size flanges see pg. 1.5



PART #	REFERENCE ID	FLANGE 1	FLANGE 2	A (in)	TUBE O.D. (in)	UNIT PRICE
4000422	QF25XQF16-075-N-1.73	QF25	QF16	1.73	0.75	\$40.00
4000424	QF40XQF16-075-N-1.73	QF40	QF16	1.73	0.75	\$45.00
4000426	QF50XQF16-075-N-1.73	QF50	QF16	1.73	0.75	\$52.00
4000428	QF40XQF25-100-N-1.73	QF40	QF25	1.73	1.00	\$45.00
4000430	QF50XQF25-100-N-1.73	QF50	QF25	1.73	1.00	\$52.00
4000432	QF50XQF40-150-N-1.73	QF50	QF40	1.73	1.50	\$52.00

ISO-LF to LF Straight Reducer Nipple

Materials:

- Standard: 304 stainless steel
- Alternative: 6061 aluminum (Call for price and delivery)

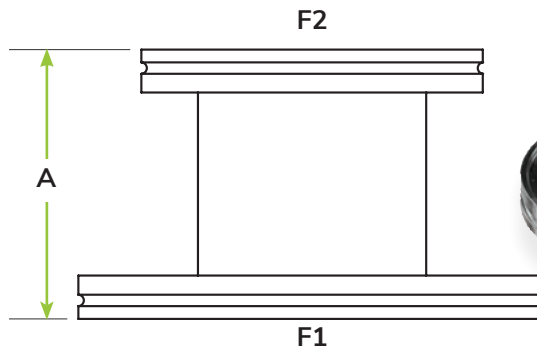
Product Notes:

- Connects different ISO-LF sizes

Options:

(Call for price and delivery)

- Custom Lengths
- Larger Sizes
- Custom Flange Combinations
- ISO-QF large size flanges see pg. 1.5
- ISO-LFB flanges
 - Tapped Bolt Holes



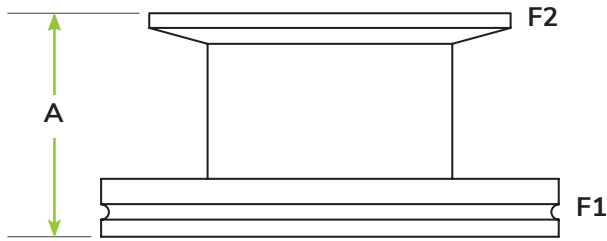
TECH TIP

Increase conductance with a conical reducer nipple. See pg. 1.47



PART #	REFERENCE ID	FLANGE 1	FLANGE 2	A (in)	TUBE O.D. (in)	UNIT PRICE
4500237	LF80XLF63-250-N-2.95	LF80	LF63	2.95	2.50	\$195.00
4500238	LF100XLF63-250-N-2.95	LF100	LF63	2.95	2.50	\$220.00
4500239	LF160XLF63-250-N-2.95	LF160	LF63	2.95	2.50	\$290.00
4500240	LF100XLF80-300-N-2.95	LF100	LF80	2.95	3.00	\$285.00
4500241	LF160XLF100-400-N-2.95	LF160	LF100	2.95	4.00	\$310.00
4501241	LF200XLF160-600-N-2.95	LF200	LF160	2.95	6.00	\$400.00

ISO-LF to QF Straight Reducer Nipple



Material:

- Standard: 304 stainless steel
- Alternative: 6061 aluminum (Call for price and delivery)

Product Notes:

- Connects to ISO-LF to ISO-QF sizes

Options: (Call for price and delivery)

- Custom lengths
- Custom flange combinations
- ISO-QF large size flanges see pg. 1.5
- ISO-LFB Flanges
 - Tapped bolt holes

PART #	REFERENCE ID	FLANGE 1	FLANGE 2	A (in)	TUBE O.D. (in)	UNIT PRICE
4500374	LF63XQF16-075-N-1.83	LF63	QF16	1.83	0.75	\$115.00
4500375	LF63XQF25-100-N-1.83	LF63	QF25	1.83	1.00	\$120.00
4500376	LF80XQF25-100-N-1.83	LF80	QF25	1.83	1.00	\$155.00
4500377	LF100XQF25-100-N-1.83	LF100	QF25	1.83	1.00	\$185.00
4500253	LF63XQF40-150-N-1.83	LF63	QF40	1.83	1.50	\$125.00
4500255	LF80XQF40-150-N-1.83	LF80	QF40	1.83	1.50	\$160.00
4500257	LF100XQF40-150-N-1.83	LF100	QF40	1.83	1.50	\$190.00
4500378	LF160XQF40-150-N-1.83	LF160	QF40	1.83	1.50	\$210.00
4500254	LF63XQF50-200-N-1.83	LF63	QF50	1.83	1.50	\$140.00
4500256	LF80XQF50-200-N-1.83	LF80	QF50	1.83	2.00	\$170.00
4500258	LF100XQF50-200-N-1.83	LF100	QF50	1.83	2.00	\$195.00
4500379	LF160XQF50-200-N-1.83	LF160	QF50	1.83	2.00	\$215.00

ISO-LF to QF Conical Reducer Nipple

Materials

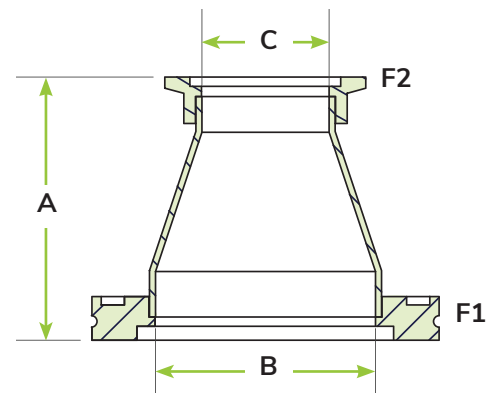
- Standard: 304 stainless steel
- Alternative: (Call for price and delivery)
 - 6061 aluminum

Product Notes:

- Connects ISO-LF to ISO-QF sizes

Options: (Call for price and delivery)

- Custom flange combinations
- Additional flange sizes
- ISO-QF large size flanges see pg. 1.5
- ISO-LFB flanges, Tapped bolt holes



PART #	REFERENCE ID	FLANGE 1	FLANGE 2	A (in)	B (in)	C (in)	UNIT PRICE
4500265	LF63XQF40-250X150-CR-2.84	LF63	QF40	2.84	2.37	1.37	\$155.00
4500266	LF80XQF40-300X150-CR-4.08	LF80	QF40	4.08	2.87	1.37	\$185.00
4500267	LF63XQF50-250X200-CR-2.85	LF63	QF50	2.85	2.37	1.87	\$170.00
4500268	LF80XQF50-300X200-CR-4.10	LF80	QF50	4.10	2.87	1.87	\$195.00
4500269	LF100XQF50-400X200-CR-4.12	LF100	QF50	4.12	3.87	1.87	\$210.00

ISO-LF to LF Conical Reducer Nipple

Materials:

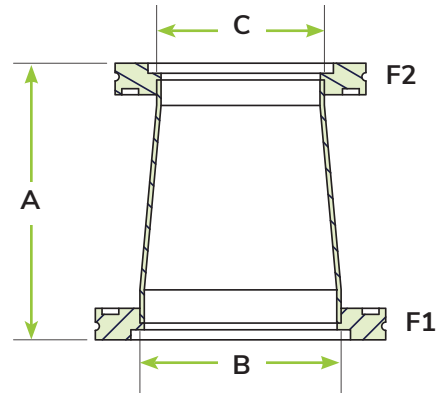
- Standard: 304 stainless steel
- Alternative: 6061 aluminum
(Call for price and delivery)

Product Notes:

- Connects different ISO-LF sizes

Options: (Call for price and delivery)

- Custom flange combinations
- Additional flange sizes
- ISO-QF large size flanges see pg. 1.5
- ISO-LFB flanges: Tapped bolt holes



PART #	REFERENCE ID	FLANGE 1	FLANGE 2	A (in)	B (in)	C (in)	UNIT PRICE
4500247	LF80XLF63-300X250-CR-4.13	LF80	LF63	4.13	2.87	2.37	\$220.00
4500248	LF100XLF63-400X250-CR-4.12	LF100	LF63	4.12	3.83	2.37	\$235.00
4500250	LF100XLF80-400X300-CR-4.13	LF100	LF80	4.13	3.83	2.87	\$245.00
4500251	LF160XLF80-600X300-CR-6.00	LF160	LF80	6.00	5.78	2.87	\$360.00
4500252	LF160XLF100-600X400-CR-6.92	LF160	LF100	6.92	5.78	3.83	\$380.00

ISO-QF to QF Conical Reducer Nipple

Materials

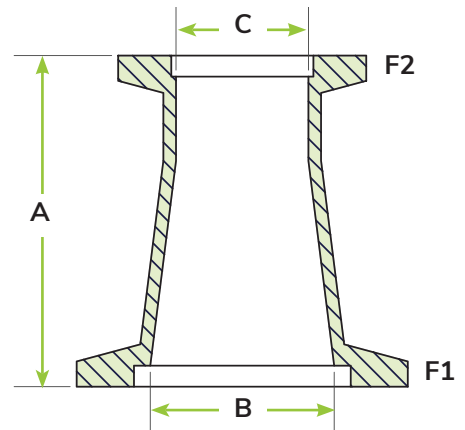
- Standard:
 - 304 stainless steel
 - 6061 aluminum

Product Notes:

- Machined from solid bar – No welds
- Connects different ISO-QF sizes

Options:

- (Call for price and delivery)**
- Custom flange combinations



304 Stainless Steel

PART #	REFERENCE ID	FLANGE 1	FLANGE 2	A (in)	B (in)	C (in)	UNIT PRICE
4000434	QF25XQF16-100X075-CRM-1.57	QF25	QF16	1.57	0.87	0.62	\$55.00
4000435	QF40XQF16-150X075-CRM-1.57	QF40	QF16	1.57	1.37	0.62	\$60.00
4000436	QF40XQF25-150X100-CRM-1.57	QF40	QF25	1.57	1.37	0.87	\$62.00
4000437	QF50XQF16-200X075-CRM-1.57	QF50	QF16	1.57	1.87	0.62	\$75.00
4000438	QF50XQF25-200X100-CRM-1.57	QF50	QF25	1.57	1.87	0.87	\$65.00
4000439	QF50XQF40-200X150-CRM-1.57	QF50	QF40	1.57	1.87	1.37	\$70.00

6061 Aluminum

PART #	REFERENCE ID	FLANGE 1	FLANGE 2	A (in)	B (in)	C (in)	UNIT PRICE
4000440	QF25XQF16-100X075-CRM-1.57-AL	QF25	QF16	1.57	0.87	0.62	\$47.00
4000441	QF40XQF16-150X075-CRM-1.57-AL	QF40	QF16	1.57	1.37	0.62	\$51.00
4000442	QF40XQF25-150X100-CRM-1.57-AL	QF40	QF25	1.57	1.37	0.87	\$53.00
4000443	QF50XQF16-200X075-CRM-1.57-AL	QF50	QF16	1.57	1.87	0.62	\$66.00
4000444	QF50XQF25-200X100-CRM-1.57-AL	QF50	QF25	1.57	1.87	0.87	\$65.00
4000445	QF50XQF40-200X150-CRM-1.57-AL	QF50	QF40	1.57	1.87	1.37	\$60.00

ISO-QF 45° Elbow

Materials

- Standard: 304 stainless steel

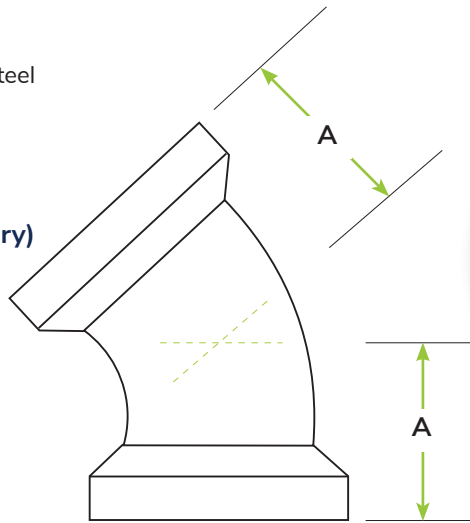
Product Notes:

- Radius elbow design

Options:

(Call for price and delivery)

- Custom lengths
- Custom flange combinations
- ISO-QF large size flanges see pg. 1.5



ORDERING NOTE: For aluminum elbow fittings see 90° mitered elbows pg. 1.51

PART #	REFERENCE ID	A (in)	UNIT PRICE
4000446	QF16-075-E45-0.96	0.96	\$49.00
4000447	QF25-100-E45-1.12	1.12	\$54.00
4000448	QF40-150-E45-1.69	1.69	\$84.00
4000449	QF50-200-E45-1.99	1.99	\$90.00

ISO-LF 45° Elbow

Materials:

- Standard: 304 stainless steel

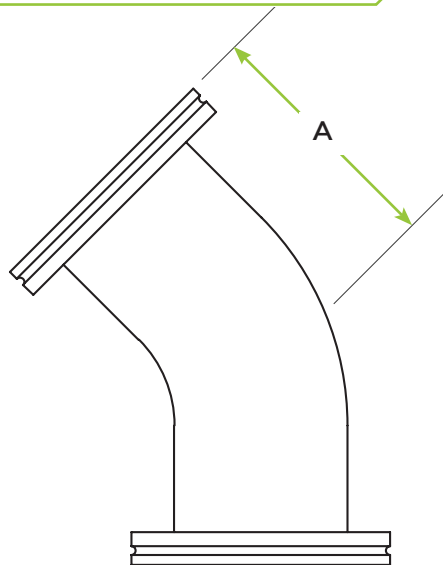
Product Notes:

- Radius elbow design

Options:

(Call for price and delivery)

- Custom lengths
- Larger sizes
- Custom flange combinations
- ISO-QF large size flanges see pg. 1.5
- ISO-LFB flanges
 - Tapped bolt holes



PART #	REFERENCE ID	A (in)	UNIT PRICE
4500270	LF63-250-E45-3.25	3.25	\$230.00
4500271	LF80-300-E45-3.93	3.93	\$255.00
4500272	LF100-400-E45-5.02	5.02	\$290.00
4500273	LF160-600-E45-9.71	9.71	\$560.00

ISO-QF 90° Elbow

Materials:

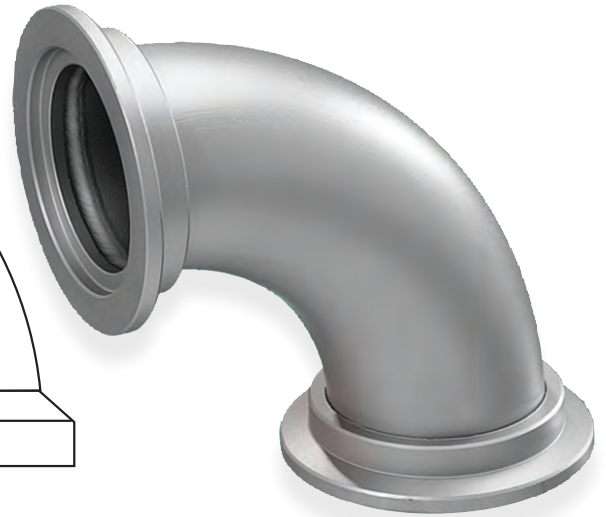
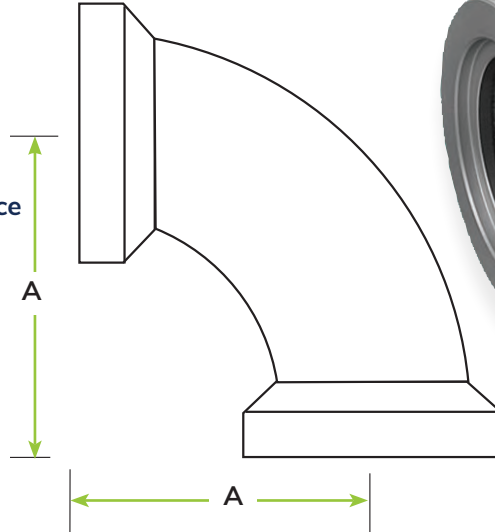
- Standard: 304 stainless steel

Product Notes:

- Radius elbow design

Options: (Call for price and delivery)

- Custom lengths
- Custom flange combinations
- ISO-QF large size flanges see pg. 1.5



PART #	REFERENCE ID	A (in)	UNIT PRICE
4000450	QF16-075-E90-1.57	1.57	\$45.00
4000451	QF25-100-E90-1.97	1.97	\$50.00
4000452	QF40-150-E90-2.56	2.56	\$68.00
4000453	QF50-200-E90-3.17	3.17	\$89.00

ORDERING NOTE: For aluminum elbow fittings see 90° mitered elbows pg. 1.51

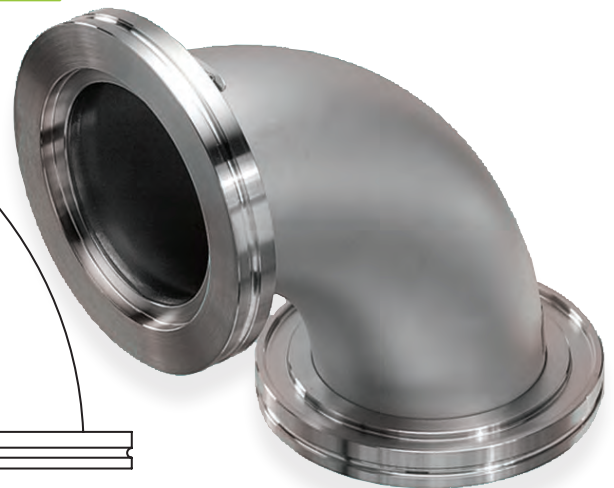
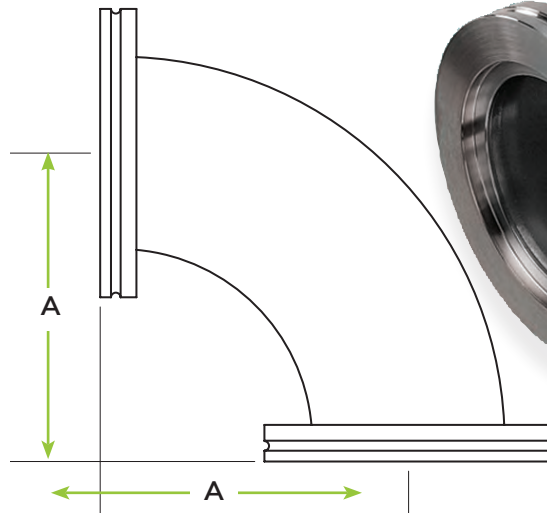
ISO-LF 90° Elbow

Materials:

- Standard: 304 stainless steel

Product Notes:

- Radius elbow design



PART #	REFERENCE ID	A (in)	UNIT PRICE
4500274	LF63-250-E90-4.00	4.00	\$205.00
4500275	LF80-300-E90-4.75	4.75	\$255.00
4500276	LF100-400-E90-6.25	6.25	\$265.00
4500277	LF160-600-E90-9.25	9.25	\$570.00
4500278	LF200-800-E90-12.25	12.25	CALL
4500279	LF250-1000-E90-15.25	15.25	CALL

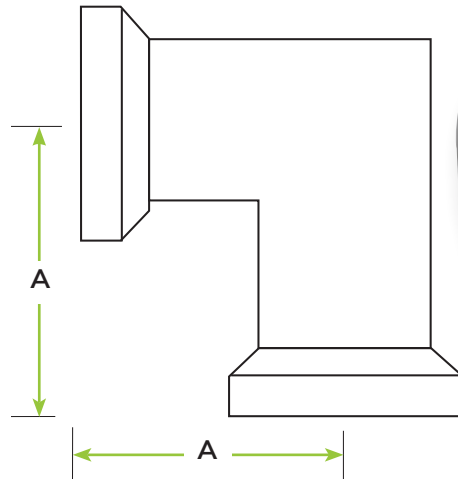
Options: (Call for price and delivery)

- Custom lengths
- Larger sizes
- Custom flange combinations
- ISO-QF large size flanges see pg. 1.5
- ISO-LFB flanges -Tapped bolt holes

ISO-QF 90° Elbow-Mitered

Materials:

- Standard: 304 stainless steel
- Alternative: 6061 aluminum (Call for price and delivery)



ISO 90° Mitered Elbows

Options: (Call for price and delivery)

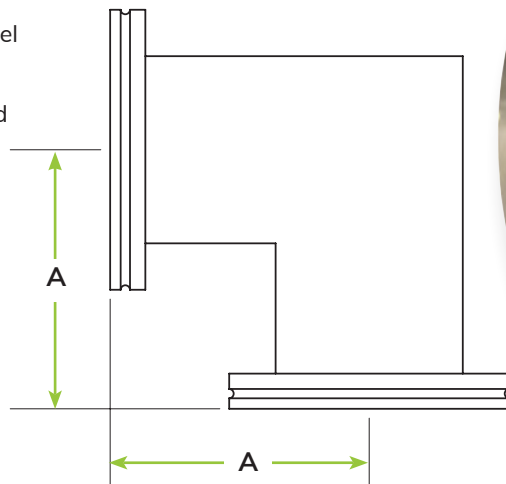
- Custom lengths
- Custom flange combinations
- ISO-QF large size flanges see pg. 1.5

PART #	REFERENCE ID	A (in)	UNIT PRICE
4000454	QF16-075-E90M-1.57	1.57	\$48.00
4000456	QF25-100-E90M-2.03	2.03	\$54.00
4000458	QF40-150-E90M-2.56	2.56	\$72.00
4000460	QF50-200-E90M-2.76	2.76	\$93.00

ISO-LF 90° Elbow-Mitered

Materials:

- Standard: 304 stainless steel
- Alternative: 6061 aluminum (Call for price and delivery)



Options: (Call for price and delivery)

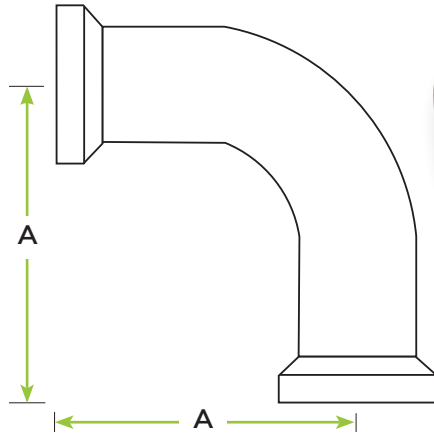
- Custom lengths
- Larger sizes
- Custom flange combinations
- ISO-QF large size flanges see pg. 1.5
- ISO-LFB flanges: Tapped bolt holes

PART #	REFERENCE ID	A (in)	UNIT PRICE
4500280	LF63-250-E90M-3.46	3.46	\$195.00
4500281	LF80-300-E90M-3.86	3.86	\$235.00
4500282	LF100-400-E90M-4.13	4.13	\$240.00
4500283	LF160-600-E90M-5.43	5.43	\$430.00
4500284	LF200-800-E90M-7.25	7.25	\$580.00
4500285	LF250-1000-E90M-8.19	8.19	\$1,350.00

ISO-QF 90° Elbow - Long Radius

Materials:

- Standard: 304 stainless steel



PART #	REFERENCE ID	A (in)	UNIT PRICE
4000462	QF16-075-E90LR-2.70	2.70	\$65.00
4000463	QF25-100-E90LR-3.64	3.64	\$70.00
4000464	QF40-150-E90LR-5.12	5.12	\$94.00
4000465	QF50-200-E90LR-5.52	5.52	\$113.00

Options: (Call for price and delivery)

- Custom lengths
- Custom flange combinations
- ISO-QF large size flanges see pg. 1.5

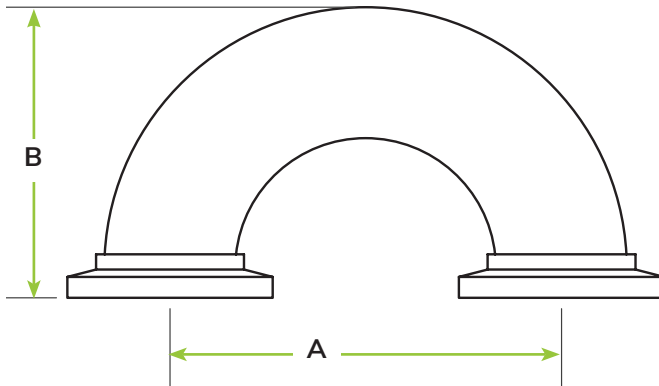
ISO-QF 180° Return

Materials:

- Standard: 304 stainless steel

Options: (Call for price and delivery)

- Custom lengths
- Custom flange combinations
- ISO-QF large size flanges see pg. 1.5



PART #	REFERENCE ID	A (in)	B (in)	UNIT PRICE
4000466	QF16-075-E180-2.25	2.25	1.67	\$70.00
4000467	QF25-100-E180-3.00	3.00	2.17	\$75.00
4000468	QF40-150-E180-4.50	4.50	3.17	\$96.00
4000469	QF50-200-E180-6.00	6.00	4.17	\$128.00

ISO-QF Tee

Materials:

- Standard: 304 stainless steel
- Alternative: 6061 aluminum (Call for price and delivery)

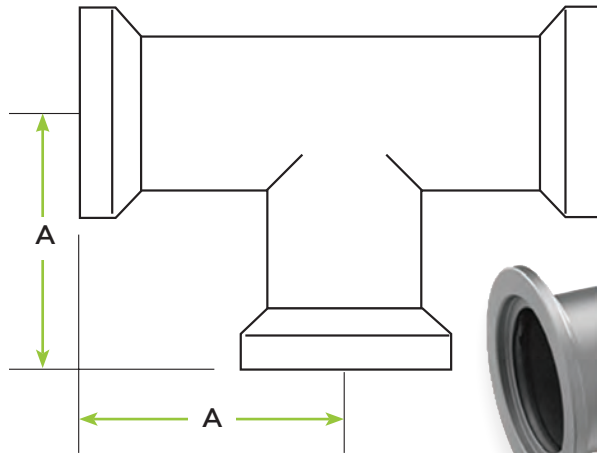
Product Notes:

- Pulled ports for optimal vacuum performance

Options:

(Call for price and delivery)

- Custom lengths
- Custom flange combinations
- ISO-QF large size flanges see pg. 1.5



PART #	REFERENCE ID	A (in)	UNIT PRICE
4000470	QF16-075-TEE-1.57	1.57	\$73.00
4000472	QF25-100-TEE-1.97	1.97	\$78.00
4000474	QF40-150-TEE-2.56	2.56	\$96.00
4000476	QF50-200-TEE-2.76	2.76	\$130.00

ISO-LF Tee

Materials:

- Standard: 304 stainless steel
- Alternative: 6061 aluminum (Call for price and delivery)

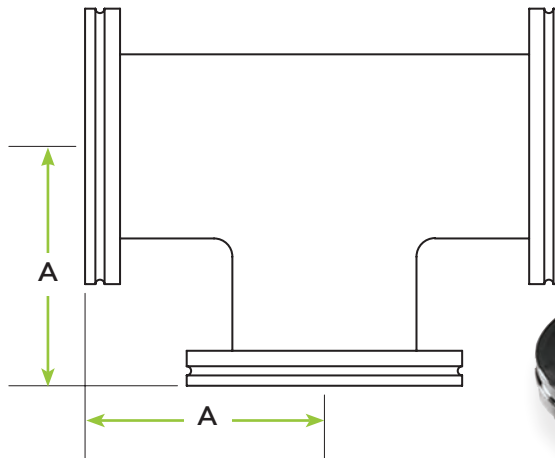
Product Notes:

- Pulled ports for optimal vacuum performance

Options:

(Call for price and delivery)

- Custom lengths
- Custom flange combinations
- ISO-QF large size flanges see pg. 1.5
- ISO-LFB flanges: Tapped bolt holes



PART #	REFERENCE ID	A (in)	UNIT PRICE
4500292	LF63-250-TEE-3.25	3.25	\$280.00
4500293	LF80-300-TEE-3.50	3.50	\$390.00
4500294	LF100-400-TEE-4.13	4.13	\$400.00
4500295	LF160-600-TEE-5.25	5.25	\$610.00
4500296	LF200-800-TEE-7.25	7.25	\$1,015.00
4500297	LF250-1000-TEE-9.75	9.75	\$1,575.00
4500298	LF320-1200-TEE-10.38	10.38	CALL
4500299	LF400-1600-TEE-12.38	12.38	CALL
4500300	LF500-2000-TEE-15.87	15.87	CALL

ISO-QF Reducing Tee

Materials:

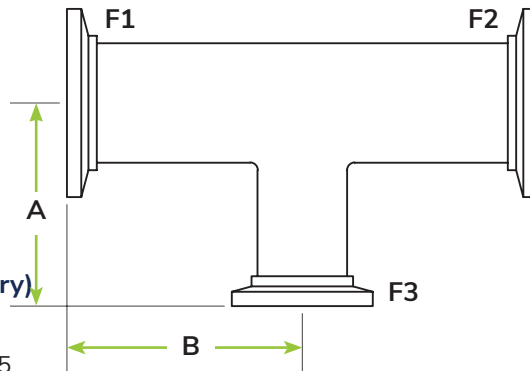
- Standard: 304 stainless steel
- Alternative: 6061 aluminum (Call for price and delivery)

Product Notes:

- Pulled ports for optimal vacuum performance
- Reducing intersection for different ISO-QF flange sizes

Options: (Call for price and delivery)

- Custom lengths
- Custom flange combinations
- ISO-QF large size flanges see pg. 1.5



PART #	REFERENCE ID	FLANGE 1 & 2	FLANGE 3	A (in)	B (in)	UNIT PRICE
4000478	QF25xQF16-100x075-RDT-1.97X1.70	QF25	QF16	1.70	1.97	\$75.00
4000480	QF40xQF16-150X075-RDT-2.56X1.95	QF40	QF16	1.95	2.56	\$88.00
4000482	QF40xQF25-150X100-RDT-2.56X2.22	QF40	QF25	2.22	2.56	\$103.00
4000484	QF50xQF16-200X075-RDT-2.76X2.20	QF50	QF16	2.20	2.76	\$105.00
4000486	QF50xQF25-200X100-RDT-2.76X2.47	QF50	QF25	2.47	2.76	\$115.00
4000488	QF50xQF40-200X150-RDT-2.76X2.81	QF50	QF40	2.81	2.76	\$135.00

ISO-LF to ISO-QF Reducing Tee

Materials:

- Standard: 304 stainless steel

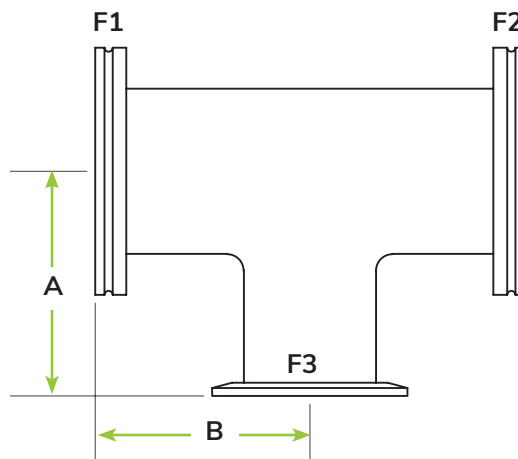
Product Notes:

- Pulled ports for optimal vacuum performance
- Reducing intersection for ISO-LF to ISO-QF flange sizes

Options:

(Call for price and delivery)

- Custom lengths
- Alternative: 6061 aluminum
- Custom flange combinations
- ISO-QF large size flanges see pg. 1.5
- ISO-LFB flanges: Tapped bolt holes



PART #	REFERENCE ID	FLANGE 1 & 2	TUBE O.D. (in)	FLANGE 3	TUBE O.D. (in)	A (in)	B (in)	UNIT PRICE
4500423	LF63xQF40-250x150-RDT-3.25X2.90	LF63	2.50	QF40	1.50	2.90	3.25	\$200.00
4500424	LF63xQF50-250X200-RDT-3.40X3.25	LF63	2.50	QF50	2.00	3.40	3.25	\$210.00
4500425	LF80XQF40-300X150-RDT-3.50X3.15	LF80	3.00	QF40	1.50	3.15	3.50	\$235.00
4500426	LF80XQF50-300X200-RDT-3.67X3.50	LF80	3.00	QF50	2.00	3.67	3.50	\$245.00
4500427	LF100XQF40-400X150-RDT-4.13X3.65	LF100	4.00	QF40	1.50	3.65	4.13	\$255.00
4500351	LF100XQF50-400X200-RDT-4.15X4.13	LF100	4.00	QF50	2.00	4.125	4.170	\$270.00

ISO-LF Reducing Tee

Materials:

- Standard: 304 stainless steel
- Alternative: 6061 aluminum
(Call for price and delivery)

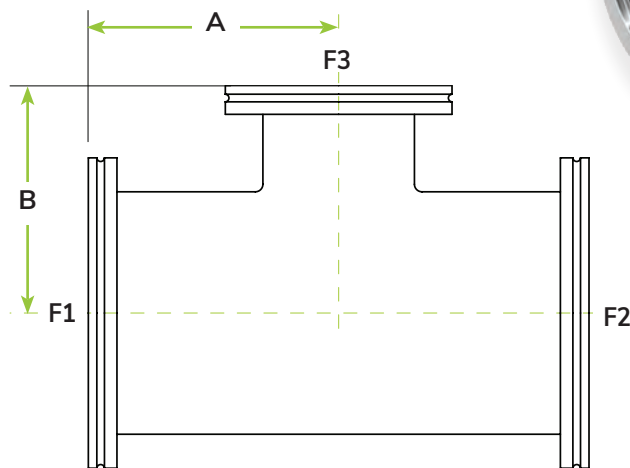
Product Notes:

- Pulled ports for optimal vacuum performance
- Reducing intersection for different ISO-LF flange sizes

Options:

(Call for price and delivery)

- Custom lengths
- Custom flange combinations
- ISO-QF large size flanges
see pg. 1.5
- ISO-LFB flanges:
Tapped bolt holes



ISO Reducing Tees

PART #	REFERENCE ID	FLANGE 1 & 2	TUBE O.D. (in)	FLANGE 3	TUBE O.D. (in)	A (in)	B (in)	UNIT PRICE
4500441	LF80XLF63-300X250-RDT-3.50X3.50	LF80	3.00	LF63	2.50	3.50	3.50	\$415.00
4500442	LF100XLF63-400X250-RDT-4.13X4.00	LF100	4.00	LF63	2.50	4.00	4.13	\$320.00
4500443	LF100XLF80-400X300-RDT-4.13X4.00	LF100	4.00	LF80	3.00	4.00	4.13	\$365.00
4500444	LF160XLF63-600X250-RDT-5.25X5.00	LF160	6.00	LF63	2.50	5.00	5.25	\$450.00
4500445	LF160XLF80-600X300-RDT-5.25X5.00	LF160	6.00	LF80	3.00	5.00	5.25	\$485.00
4500446	LF160XLF100-600X400-RDT-5.25X5.13	LF160	6.00	LF100	4.00	5.13	5.25	\$540.00
4500447	LF200XLF160-800X600-RDT-7.25X7.25	LF200	8.00	LF160	6.00	7.25	7.25	\$980.00

ISO-QF Cross

Materials:

- Standard: 304 stainless steel
- Alternative: 6061 aluminum
(Call for price and delivery)

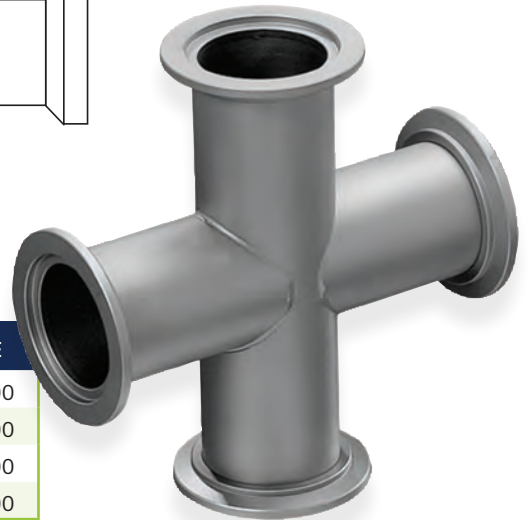
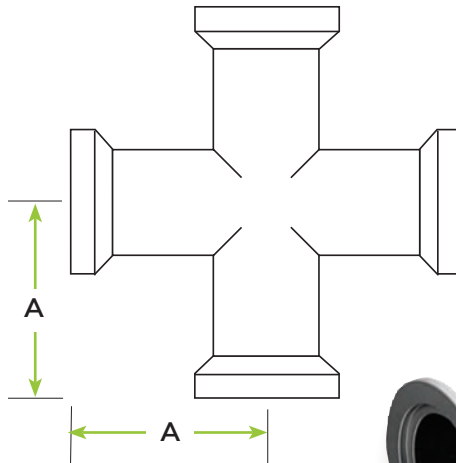
Product Notes:

- Pulled ports for optimal vacuum performance

Options:

(Call for price and delivery)

- Custom lengths
- Custom flange combinations
- ISO-QF large size flanges see pg. 1.5

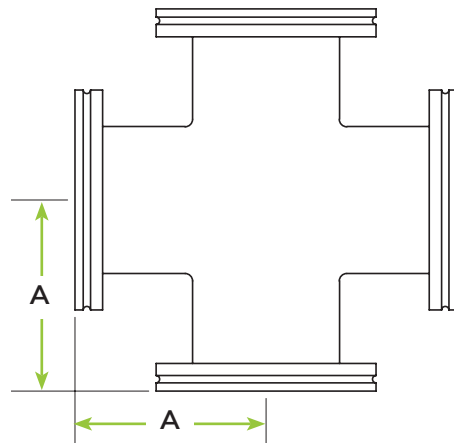


PART #	REFERENCE ID	A (in)	UNIT PRICE
4000502	QF16-075-4X-1.57	1.57	\$100.00
4000504	QF25-100-4X-1.97	1.97	\$120.00
4000506	QF40-150-4X-2.56	2.56	\$150.00
4000508	QF50-200-4X-2.76	2.76	\$200.00

ISO-LF Cross

Materials:

- Standard: 304 stainless steel
- Alternative: 6061 aluminum
(Call for price and delivery)



PART #	REFERENCE ID	A (in)	UNIT PRICE
4500310	LF63-250-4X-3.25	3.25	\$385.00
4500311	LF80-300-4X-3.50	3.50	\$560.00
4500312	LF100-400-4X-4.13	4.13	\$600.00
4500313	LF160-600-4X-5.25	5.25	\$1,020.00
4500314	LF200-800-4X-7.25	7.25	\$1,765.00
4500315	LF250-1000-4X-9.75	9.75	\$2,175.00
4500316	LF320-1200-4X-10.38	10.38	CALL
4500317	LF400-1600-4X-13.37	13.37	CALL
4500318	LF500-2000-4X-15.87	15.87	CALL

Product Notes:

- Pulled ports for optimal vacuum performance

Options: (Call for price and delivery)

- Custom lengths
- Larger Sizes
- Custom flange combinations
- ISO-QF large size flanges see pg. 1.5
- ISO-LFB flanges
- Tapped bolt holes

ISO-QF Reducing Cross

1

ISO Reducing Crosses

Materials:

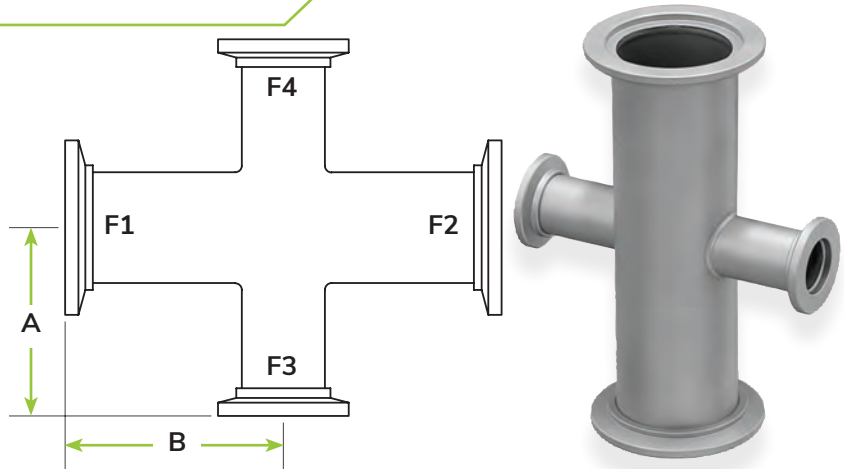
- Standard: 304 stainless steel
- Alternative: 6061 aluminum (Call for price and delivery)

Product Notes:

- Pulled ports for optimal vacuum performance
- Reducing intersection for different ISO-QF flange sizes

Options: (Call for price and delivery)

- Custom lengths
- Custom flange combinations
- ISO-QF large size flanges see pg. 1.5



PART #	REFERENCE ID	FLANGE 1 & 2	FLANGE 3 & 4	A (in)	B (in)	UNIT PRICE
4000490	QF25xQF16-100x075-R4X-1.97X1.70	QF25	QF16	1.70	1.97	\$125.00
4000492	QF40xQF16-150X075-R4X-2.56X1.95	QF40	QF16	1.95	2.56	\$145.00
4000494	QF40xQF25-150X100-R4X-2.56X2.22	QF40	QF25	2.22	2.56	\$155.00
4000496	QF50xQF16-200X075-R4X-2.76X2.20	QF50	QF16	2.20	2.76	\$195.00
4000498	QF50xQF25-200X100-R4X-2.81X2.76	QF50	QF25	2.81	2.76	\$200.00
4000500	QF50xQF40-200X150-R4X-2.81X2.75	QF50	QF40	2.81	2.75	\$225.00

ISO-LF to ISO-QF Reducing Cross

Materials:

- Standard: 304 stainless steel
- Alternative: 6061 aluminum (Call for price and delivery)

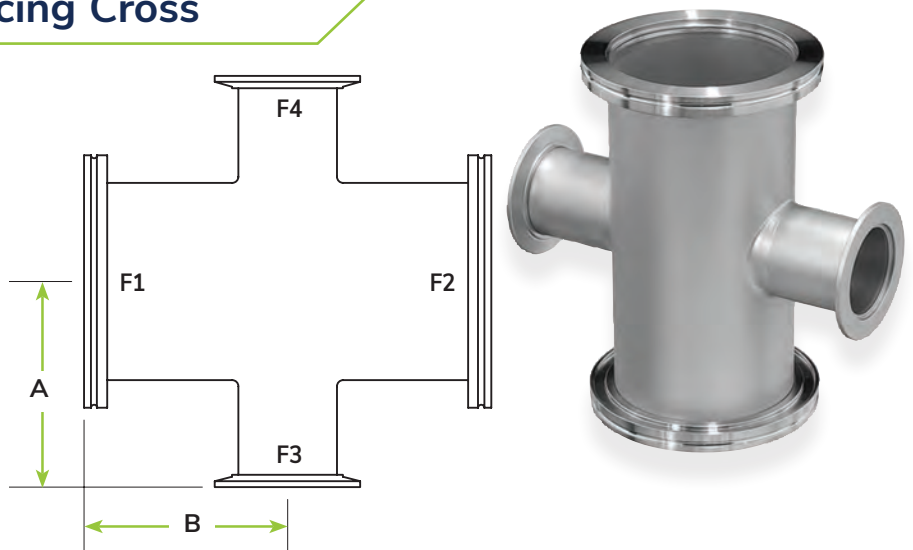
Product Notes:

- Pulled ports for optimal vacuum performance
- Reducing intersection for ISO-LF to ISO-QF flange sizes

Options:

(Call for price and delivery)

- Custom lengths
- Custom flange combinations
- ISO-QF large size flanges see pg. 1.5
- ISO-LFB flanges: Tapped bolt holes



PART #	REFERENCE ID	FLANGE 1 & 2	TUBE O.D. (in)	FLANGE 3 & 4	TUBE O.D. (in)	A (in)	B (in)	UNIT PRICE
4500435	LF63xQF40-250x150-R4X-3.25X2.90	LF63	2.50	QF40	1.50	3.25	2.92	\$310.00
4500436	LF63xQF50-250X200-R4X-3.25X3.40	LF63	2.50	QF50	2.00	3.25	3.40	\$360.00
4500437	LF80xQF40-300X150-R4X-3.50X3.15	LF80	3.00	QF40	1.50	3.50	3.17	\$395.00
4500438	LF80xQF50-300X200-R4X-3.50X3.65	LF80	3.00	QF50	2.00	3.50	3.65	\$445.00
4500439	LF100xQF40-400X150-R4X-4.13X3.65	LF100	4.00	QF40	1.50	4.13	3.65	\$450.00
4500369	LF100xQF50-400X200-R4X-4.13X4.17	LF100	4.00	QF50	2.00	4.13	4.17	\$550.00

ISO-LF Reducing Cross

Materials:

- Standard: 304 stainless steel

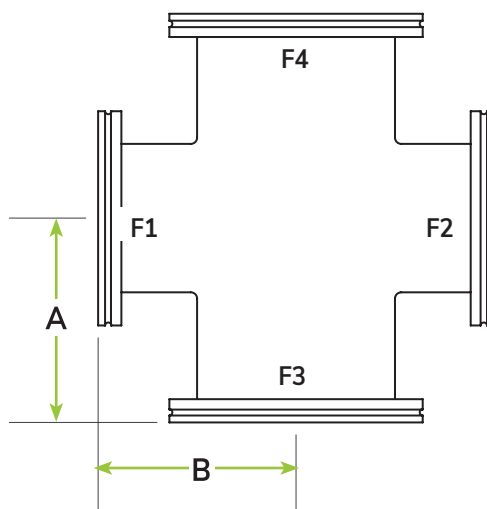
Product Notes:

- Pulled ports for optimal vacuum performance
- Reducing intersection for different ISO-LF flange sizes

Options:

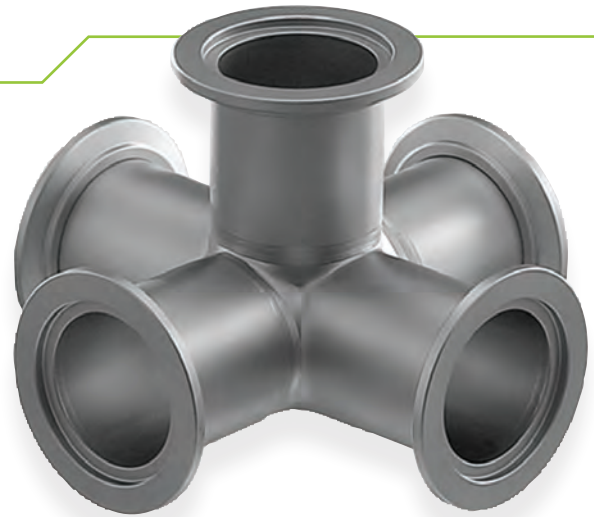
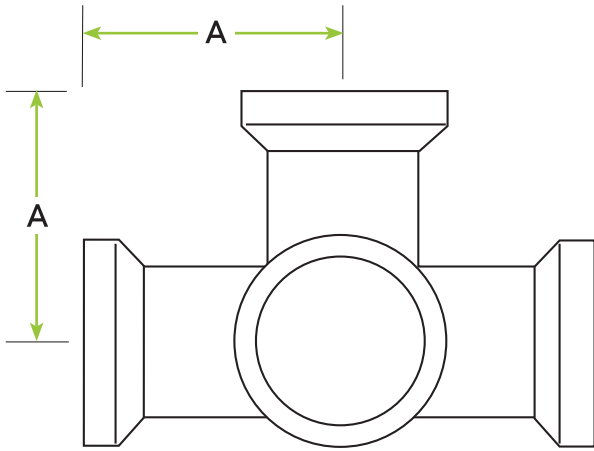
(Call for price and delivery)

- Custom lengths
- Custom flange combinations
- Alternative: 6061 aluminum
- ISO-QF large size flanges see pg. 1.5
- ISO-LFB flanges: Tapped Bolt Holes



PART #	REFERENCE ID	FLANGE 1 & 2	TUBE O.D. (in)	FLANGE 3 & 4	TUBE O.D. (in)	A (in)	B (in)	UNIT PRICE
4500450	LF80XLF63-300X250-R4X-3.50X3.50	LF80	3.00	LF63	2.50	3.50	3.50	\$500.00
4500451	LF100XLF63-400X250-R4X-4.13X4.00	LF100	4.00	LF63	2.50	4.13	4.00	\$570.00
4500452	LF100XLF80-400X300-R4X-4.13X4.00	LF100	4.00	LF80	3.00	4.13	4.00	\$670.00
4500453	LF160XLF63-600X250-R4X-5.25X5.00	LF160	6.00	LF63	2.50	5.25	5.00	\$790.00
4500454	LF160XLF80-600X300-R4X-5.25X5.00	LF160	6.00	LF80	3.00	5.25	5.00	CALL
4500455	LF160XLF100-600X400-R4X-5.25X5.13	LF160	6.00	LF100	4.00	5.25	5.13	\$1,000.00
4500456	LF200XLF160-800X600-R4X-7.25X6.25	LF200	8.00	LF160	6.00	7.25	6.25	\$1,470.00

ISO-QF 5-Way Cross



PART #	REFERENCE ID	A (in)	UNIT PRICE
4000510	QF16-075-5X-1.50	1.50	\$225.00
4000511	QF25-100-5X-2.05	2.05	\$250.00
4000512	QF40-150-5X-2.42	2.42	\$290.00
4000513	QF50-200-5X-3.17	3.17	\$390.00

Materials:

- Standard: 304 stainless steel

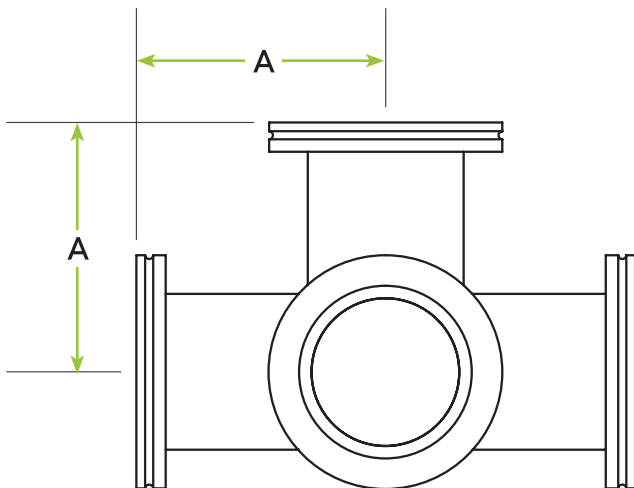
Product Notes:

- Pulled ports for optimal vacuum performance

Options: (Call for price and delivery)

- Custom lengths
- Custom flange combinations
- Alternative: 6061 aluminum
- ISO-QF large size flanges see pg. 1.5

ISO-LF 5-Way Cross



PART #	REFERENCE ID	A (in)	UNIT PRICE
4500328	LF63-250-5X-4.00	4.00	\$615.00
4500329	LF80-300-5X-3.50	3.50	\$780.00
4500330	LF100-400-5X-5.12	5.12	\$890.00
4500331	LF160-600-5X-6.31	6.31	CALL
4500332	LF200-800-5X-7.25	7.25	CALL
4500333	LF250-1000-5X-9.75	9.75	CALL

Materials:

- Standard: 304 stainless steel

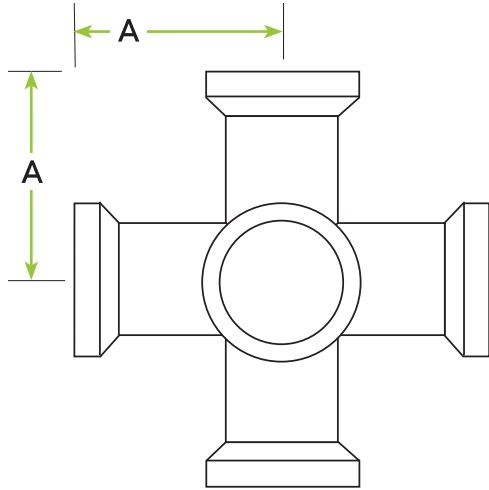
Product Notes:

- Pulled ports for optimal vacuum performance

Options: (Call for price and delivery)

- Custom lengths
- Custom flange combinations
- Alternative: 6061 aluminum
- ISO-QF large size flanges see pg. 1.5

ISO-QF 6-Way Cross



PART #	REFERENCE ID	A (in)	UNIT PRICE
4000514	QF16-075-6X-1.50	1.50	\$245.00
4000515	QF25-100-6X-2.05	2.05	\$275.00
4000516	QF40-150-6X-2.42	2.42	\$315.00
4000517	QF50-200-6X-3.17	3.17	\$420.00

Materials:

- Standard: 304 stainless steel
- Alternative: 6061 aluminum (Call for price and delivery)

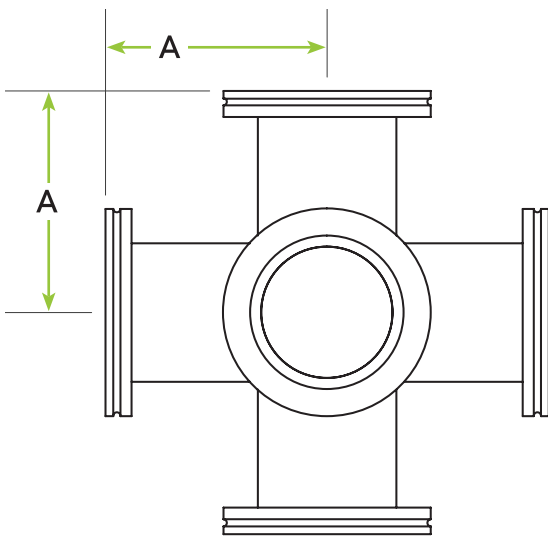
Options: (Call for price and delivery)

- Custom lengths
- Custom flange combinations
- ISO-QF large size flanges see pg. 1.5

Product Notes:

- Pulled ports for optimal vacuum performance

ISO-LF 6-Way Cross



PART #	REFERENCE ID	A (in)	UNIT PRICE
4500334	LF63-250-6X-4.00	4.00	\$820.00
4500335	LF80-300-6X-3.50	3.50	\$1,050.00
4500336	LF100-400-6X-5.12	5.12	\$1,125.00
4500337	LF160-600-6X-6.31	6.31	CALL
4500338	LF200-800-6X-7.25	7.25	CALL
4500339	LF250-1000-6X-9.75	9.75	CALL

Materials:

- Standard: 304 stainless steel
- Alternative: 6061 aluminum (Call for price and delivery)

Options: (Call for price and delivery)

- Custom lengths
- Custom flange combinations
- ISO-QF large size flanges see pg. 1.5
- ISO-LFB flanges - Tapped bolt holes

Product Notes:

- Pulled ports for optimal vacuum performance

CF and Wire Seal Flanges & Fittings

2

CF and Wire Seal Flanges & Fittings



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CF and Wire Seal FLANGES & FITTINGS

2

CF and Wire Seal Flanges & Fittings



Overview

CF and wire seal flanges are part of the same family of ultra high vacuum components that compress a copper or elastomer gasket between two stainless steel flanges to create a vacuum tight seal. The CF flange system is more commonly used within the vacuum industry and as such has a much larger standard product offering and faster delivery. Wire seal flanges are desirable for those applications that require flanges larger than those available with the CF flange system. **ANCORP** CF flanges are manufactured to industry standards and are interchangeable with all other ConFlat® style flanges and fittings. Wire seal flanges have no standard dimension specifications. Vacuum component manufacturers endeavor to create interchangeable flanges, however, it is our opinion that the only way to ensure compatibility is to purchase a mating set of wire seal flanges from one manufacturer.

All flanges offered by **ANCORP** are manufactured on state-of-the-art CNC (computer numerical control) lathes to ensure consistency with dimensional tolerances, and extremely fine surface finishes. Water soluble, non-sulfur based coolants are used during the manufacturing process. The flanges are cleaned in an ultrasonic deionized water based cleaning system and vacuum packaged free from visible particulates and oils, ready for immediate use in any vacuum application.

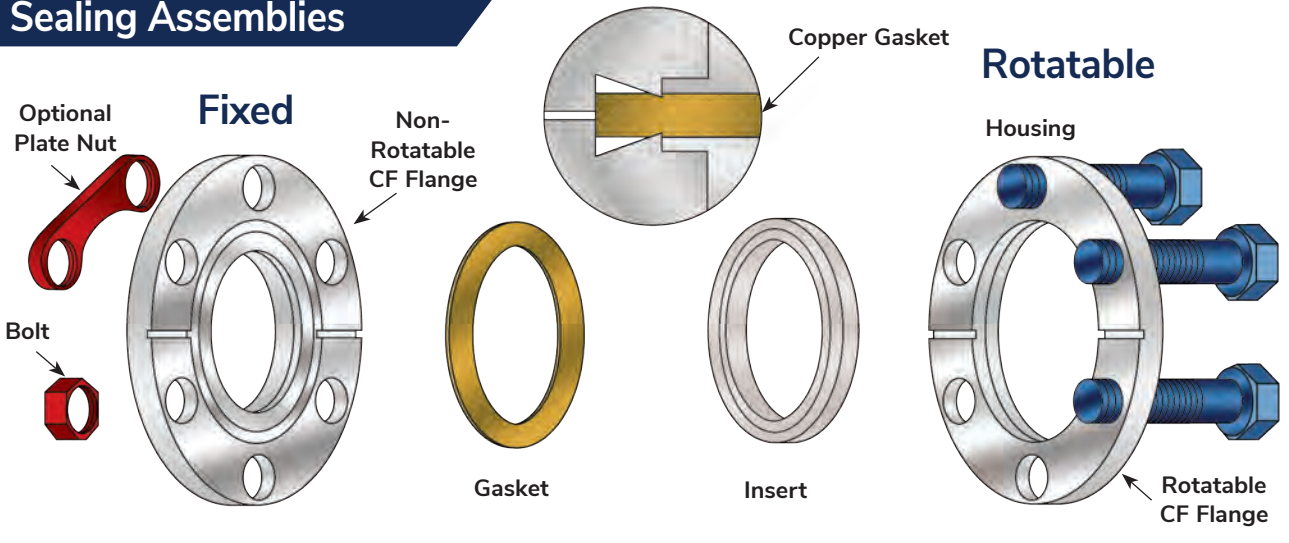
Specifications:

- Vacuum rated to 1×10^{-13} Torr.
- Leak rating $< 1 \times 10^{-9}$ std. cc/s helium
- Temperature range: -200°C to 450°C
- Standard materials:
 - Flanges and fittings: 304L stainless steel
 - Seals: OFHC copper for ultra high vacuum (UHV) or Viton® for high vacuum (HV)
- Standard sizes:
 - CF flanges outer diameter: 1 1/3 inches to 16 1/2 inches (for tubing diameter 1/4 inch up to 14 inches)
 - Wire seal flanges outer diameter: 12 3/8 inches up to 27 1/8 inches (for tubing diameter 10 inches up to 24 inches)

Features:

- Reusable flanges
- Elastomer Seals
- Sexless flanges – CF flange system
- Rotatable flanges for easier bolt hole alignment – CF flange system
- Tapped or clearance bolt holes available
- Adapters to other flange systems available
- Compatible with U.S. Standard (imperial) and metric measurements
- Interchangeable with other ConFlat® style flanges

CF Standard Sealing Assemblies



The CF flange system provides a complete range of flanges to mount with tubing sized 3/4 inch up to 14 inches in diameter. The CF seal assembly consists of three types of sub-components; two flanges, a sealing gasket and a fastener to compress the seal between the two flanges.

CF Flanges are available in two general styles; fixed and rotatable. Fixed flanges have a set bolt hole orientation while rotatable flanges have a two piece design allowing for bolt hole rotation to ease bolt alignment when mating the two flanges.

The two pieces of the rotatable CF flange are called the insert (in which the knife-edge is machined) and the housing (in which the bolt holes are machined). When installing these components the housing is placed behind the insert on the tubing prior to welding the insert to the tubing.

Both fixed and rotatable flanges are available with clearance and tapped bolt holes. Clearance bolt holes allow for unrestricted passage of a bolt through the flanges. The bolt is then tightened with a nut on the back side of the flange assembly. Tapped bolt holes are threaded to receive and tighten the bolt directly and do not utilize a nut. This is an excellent space saving option and is particularly useful when fastening a flange to a chamber wall or gate valve.

CF gaskets are made of either OFHC electronic grade copper or Viton® elastomer. Copper gaskets are by far

the most commonly used with the CF flange system and when compressed between the flange knife-edges provide a vacuum tight seal capable of achieving ultra high vacuum pressures and temperatures as high as 450°C. **ANCORP** does not recommend using a CF copper gasket for more than one seal. Viton® gaskets are capable of high vacuum pressures and temperatures as high as 150°C (204°C intermittent use). Viton® gaskets are reusable and can be used many times to make new vacuum tight seals.

CF Fasteners such as; bolts, nuts and washers are made of high tensile strength stainless steel. Bolts are offered with standard hex-head or 12-point head and silver plated. **ANCORP** recommends either high temperature anti-seize lubricant or silver plated bolts for applications with high temperature to prevent galling of the bolt and nut or threaded bolt hole. Nuts are offered with standard or plate nut design. Plate nuts are the most convenient way of fastening CF flanges. Plate nuts allow adjacent bolts to be tightened into one nut and eliminate the need for a second wrench to hold the nut while tightening. This is particularly useful when access to the installation is limited or there is limited clearance for the flange in an area of your vacuum system.

ANCORP offers a complete line of flanges, fittings, valves, traps and accessories with CF connections that can be used to create a complete vacuum system or pumping line.

CF Standard Sealing Assemblies

Each sealing pair of CF flanges contains an identical flange face with a knife-edge machined into the surface. A copper or Viton® sealing gasket is placed into the gasket capture groove of one of the two flanges. The flanges compress the gasket as the fastening bolts are tightened. This pressure forces the knife-edges of the two flanges into the gasket, creating an annular groove. The gasket material cold flows under this pressure and fills microscopic surface imperfections. The sealing knife-edges create a vacuum tight seal capable of withstanding temperature extremes from -200°C up to 450°C and pressures as low as 1×10^{-13} Torr.

Assembly Instructions:

Always wear lint-free gloves when touching or handling any part of a vacuum component that will come into contact with the vacuum atmosphere.

- 1) Check both flanges for cleanliness and that no sealing surfaces have dents or scratches.
 - 2) Apply anti-seize lubricant on the threaded portion of your bolts. If you have silver-plated bolts then the anti-seize lubricant is unnecessary.
- ANCORP** recommends either anti-seize lubricant or silver plated bolts for almost all CF assemblies. Especially for those assemblies that will be subjected to higher temperatures or have tapped bolt holes. Bolt galling in a tapped flange can ruin the machined thread pattern in the bolt hole and render the entire flange unusable.
- 3) Place a sealing gasket against the knife-edge of a non-rotatable flange.
 - 4) Align the bolt holes.
 - 5) Insert the bolts, add the washer to the nut side of the assembly and hand tighten. After hand tightening all the bolts in the assembly, apply a wrench to both the bolt head and the nut.

Tighten by turning the nuts in small increments (1/2 turn or less) using an alternating pattern choosing a bolt across the flange from the last. Continue the incremental tightening of the nuts in the pattern (shown in Fig. 2) until the desired torque pressures have been achieved. This tightening procedure ensures even gasket compression and a reliable seal.

Del-Seal™ CF Metal Seal Flange

FIG. 1

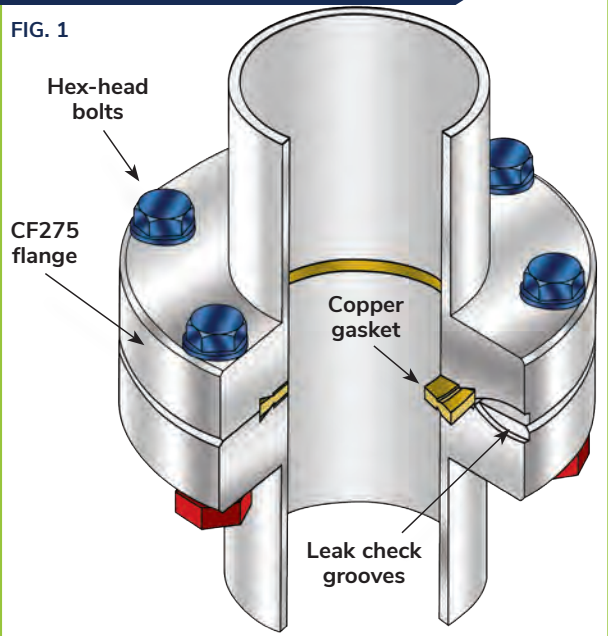
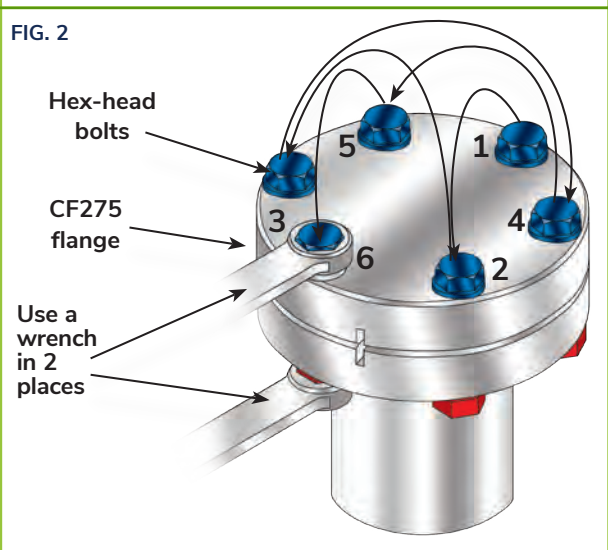


FIG. 2



Maximum Torque

FLANGE SIZE	COPPER GASKET	VITON® GASKET
CF133	7 ft./lbs.	7-10 ft./lbs.
CF212	12 ft./lbs.	7-10 ft./lbs.
CF275	12 ft./lbs.	7-10 ft./lbs.
CF338	15 ft./lbs.	7-10 ft./lbs.
CF450	15 ft./lbs.	7-10 ft./lbs.
CF462	15 ft./lbs.	7-10 ft./lbs.
CF600	15 ft./lbs.	7-10 ft./lbs.
CF675	15 ft./lbs.	7-10 ft./lbs.
CF800	15 ft./lbs.	7-10 ft./lbs.
CF1000	15 ft./lbs.	7-10 ft./lbs.
CF1200	15 ft./lbs.	7-10 ft./lbs.
CF1325	26 ft./lbs.	7-10 ft./lbs.
CF1400	26 ft./lbs.	7-10 ft./lbs.
CF1650	26 ft./lbs.	7-10 ft./lbs.

U.S. vs. Metric CF Flanges

2 Special Purpose CF Flanges

U.S. manufacturers of CF flanges name them according to their outer diameter. Flanges measured in inches i.e. a CF600 flange has an outer diameter of approximately 6 inches.

European identification for these flanges is expressed in a variety of ways; the flange outer diameter is measured in millimeters or the flange inner diameter counterbore (the area machined to accept tubing for welding) is measured in millimeters or the inner diameter of the largest through bore is measured in millimeters. Measurements are rounded to the nearest millimeter for naming purposes.

U.S. and Metric CF flanges are compatible. The only difference in design is that metric flanges have a metric bolt thread machined into tapped bolt holes. **ANCORP** can provide metric tapped flanges upon request.

Common U.S. to Metric Equivalents

FLANGE SIZE	DIN STANDARD	EUROPEAN SIZES
CF133	DN16 CF	CF16
CF212	DN25 CF	CF25
CF275	DN35 CF	CF35, CF38, CF40
CF338	DN50 CF	CF50
CF450	DN63 CF	CF63, CF64
CF462	DN75 CF	CF75
CF600	DN100 CF	CF100
CF675	DN125 CF	CF125
CF800	DN150 CF	CF150, CF160
CF1000	DN200 CF	CF200
CF1200	DN250 CF	CF250

Special Purpose CF Flanges

Double-Sided CF Flanges



These flanges are manufactured with the same size CF flange on both sides. They are installed between two flanges also of the same size. This is a convenient and efficient way to add a variety of vacuum accessories to your system such as measurement devices, shutters and valves.

Zero-Length Reducer CF Flanges



These flanges are manufactured with different size CF flange on either side of the flange. They allow direct assembly of two different sizes of CF flanges with minimal impact on the length added to your system to accomplish the transition. Zero-length reducers are the width of one standard flange.

Adaptive CF Flanges



These flanges are manufactured in a variety of useful designs. Adapt from a single or double-sided CF to one or two female NPT side ports, or a double-sided CF with a CF133 side port. These flanges are ideal for adding vacuum accessories to your system such as measurement devices, shutters and valves.

Wire Seal Flange System

The wire seal flange system provides a complete range of flanges to mount with tubing sized 10 inches up to 24 inches outer diameter. The wire seal assembly consists of three types of sub-components; two flanges, a sealing gasket and a fastener to compress the seal between the two flanges.

Wire seal flanges are available in two general designs: male and female. Female flanges accept the sealing gasket while the male flange has a protruding circular ridge that fits into the gasket groove on the receiving female flange. Upon compression the gasket material cold flows under this pressure and fills microscopic surface imperfections on the sealing surfaces creating a vacuum tight seal capable of withstanding temperature extremes from -200°C up to 450°C and pressures as low as 1×10^{-13} Torr. There are no standard rotatable wire seal flanges so great care must be taken to specify bolt hole orientation on chambers and fittings that are assembled with these flanges.

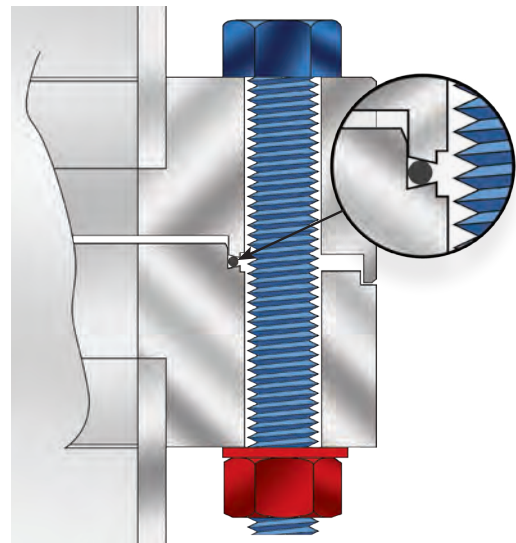
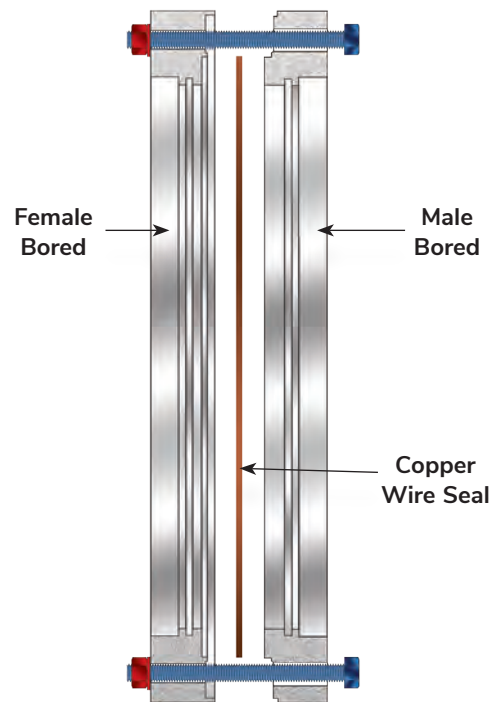
Wire seal gaskets are made of either OFHC electronic grade copper wire or Viton® elastomer. Copper gaskets are by far the most commonly used with the wire seal flange system and when compressed between the flanges provide a vacuum tight seal capable of achieving ultra high vacuum pressures and temperatures as high as 450°C .

ANCORP does not recommend using a wire seal copper gasket for more than one seal. Viton® gaskets are capable of high vacuum pressures and temperatures as high as 150°C (204°C intermittent use). Viton® gaskets are reusable and can be used many times to make new vacuum tight seals.

Wire seal fasteners are hex-head bolts, nuts and washers made of high tensile strength stainless steel. Wire seal assembly follows the same guidelines as the CF flange system except for the maximum torque ratings which are included on this page.

Wire seal flanges are ideal for those applications that require large diameter ports and extremely low vacuum pressure. Common examples are bell jar systems, vacuum furnaces, deposition systems and environmental chambers.

Wire Seal Flange Assembly



Maximum Torque

FLANGE SIZE	COPPER GASKET	VITON® GASKET
WF1200	26 ft./lbs.	7-10 ft./lbs.
WF1400	26 ft./lbs.	7-10 ft./lbs.
WF1700	33 ft./lbs.	7-10 ft./lbs.
WF1900	33 ft./lbs.	7-10 ft./lbs.
WF2200	33 ft./lbs.	7-10 ft./lbs.
WF2700	33 ft./lbs.	7-10 ft./lbs.

CF and Wire Seals Introduction

ANCORP provides CF and wire seal gaskets for all standard sizes. We offer either high vacuum or ultra high vacuum sealing gaskets to meet the needs of your specific application.

2

CF and Wire Seals

Specifications:

- Leak rating 1×10^{-9} std. cc/s helium
- Temperature range:
OFE Copper: -200°C to 450°C
Viton® -70°C up to 150°C Intermittent use to 200°C
- Standard materials:
- OFHC copper for ultra high vacuum (UHV) or Viton® for high vacuum (HV)

Features:

- Reusable flanges
- All-metal seals
- Sexless flanges - CF flange system
- Rotatable flanges for easier bolt hole alignment
- Tapped or clearance bolt holes available
- Adapters to other flange systems available
- Compatible with U.S. Standard and metric measurements
- Interchangeable with other ConFlat® style flanges

CF Copper Gaskets



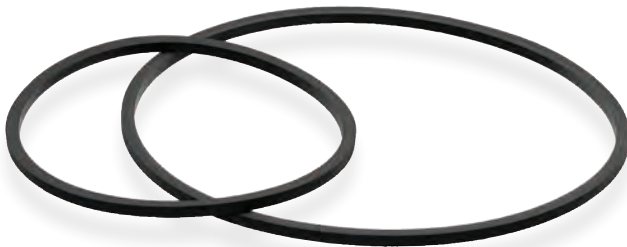
The basic seal for the CF flange system is an oxygen free electronic grade (OFE) copper gasket that is compressed between the knife-edges (flat version) or between a male and female edge (round single strand version) of two CF flanges to create a seal capable of achieving ultra high vacuum pressures. Copper gaskets have a temperature range of -200°C up to 450°C.

Wire Seal Copper Gaskets



The Wire Seal Copper Gaskets are precisely punched, de-burred, chemically treated and packaged to eliminate and prevent surface imperfections. CF wire seal copper gaskets provide one reliable seal per use. Use a new copper gasket each time you install a CF sealing assembly. They are the best gasket to use for ultra-high vacuum processes with a UHV rating of approximately 1×10^{-13} Torr.

CF & Wire Seal Viton® Gaskets



This alternative seal for the CF flange system is a vacuum grade fluorocarbon elastomer gasket that is compressed between either the knife-edges or the male and female wire seal flanges of two CF flanges to create a seal capable of achieving high vacuum pressure. Viton® gaskets have a temperature range of -70°C up to 150°C (200°C intermittent use). These gaskets are precisely lathe cut, de-burred, cleaned and packaged to eliminate and prevent shedding or rips. CF Viton® gaskets may be reused many times for reinstallation of CF sealing assemblies. They are the best gasket to use for high vacuum processes with a UHV rating of approximately 1×10^{-8} Torr.

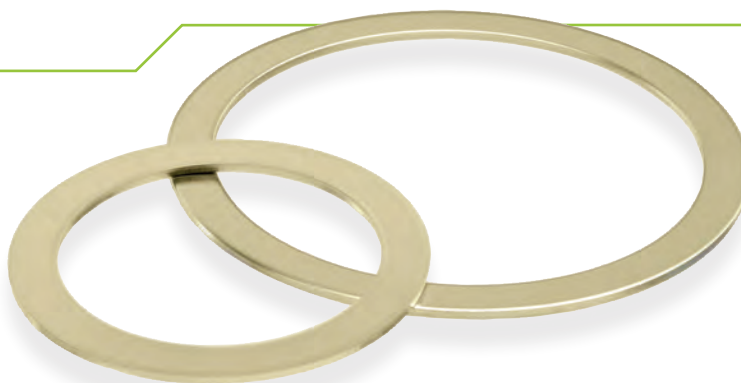
CF Copper Gaskets

Materials:

- OFE Copper

Product Notes:

- Single use seal
- Temperature range: -200°C up to 450°C
- Pressure range: UHV (approx. 1×10^{-13} Torr.)



PART #	REFERENCE ID	USE WITH FLANGE	INNER DIAMETER (in)	OUTER DIAMETER (in)	DESCRIPTION	UNIT PRICE
0604020	CF133-GA-CO	CF133	0.64	0.835	(10) Copper Gaskets	\$16.00
0604022	CF212-GA-CO	CF212	1.01	1.29	(10) Copper Gaskets	\$20.00
0604024	CF275-GA-CO	CF275	1.45	1.895	(10) Copper Gaskets	\$23.00
0604025	CF275-GA-CO-SD	CF275	SOLID	1.895	(10) Copper Gaskets, SOLID	\$23.00
0604026	CF275-175-GA-CO	CF275	1.53	1.895	(10) Copper Gaskets	\$26.00
0604027	CF338-GA-CO	CF338	2.01	2.42	(10) Copper Gaskets	\$26.00
0604029	CF450-GA-CO	CF450	2.505	3.24	(10) Copper Gaskets	\$34.00
0604031	CF462-GA-CO	CF462	3.01	3.60	(10) Copper Gaskets	\$42.00
0604033	CF600-GA-CO	CF600	4.01	4.74	(10) Copper Gaskets	\$51.00
0604035	CF675-GA-CO	CF675	5.00	5.56	(10) Copper Gaskets	\$60.00
0604037	CF800-GA-CO	CF800	6.01	6.74	(10) Copper Gaskets	\$70.00
0604039	CF1000-GA-CO	CF1000	8.01	8.74	(10) Copper Gaskets	\$85.00
0604041	CF1200-GA-CO	CF1200	10.00	10.74	(1) Copper Gaskets	\$55.00
0604043	CF1325-GA-CO	CF1325	10.89	11.575	(1) Copper Gaskets	\$50.00
0604045	CF1400-GA-CO	CF1400	11.80	12.31	(1) Copper Gaskets	\$57.00
0604047	CF1450-GA-CO	CF1450	12.11	12.81	(1) Copper Gaskets	\$57.00
0604049	CF1650-GA-CO	CF1650	14.135	14.81	(1) Copper Gaskets	\$65.00

Wire Seal Copper Gaskets

Materials:

- OFE Copper

Product Notes:

- Single use seal

- Temperature range: -200°C up to 450°C
- Pressure range: UHV (approx. 1×10^{-13} Torr)



PART #	REFERENCE ID	USE WITH FLANGE	DESCRIPTION	UNIT PRICE
0606511	WF1200-GA-CO	WF1200	(1) Copper Gasket	CALL
0606512	WF1400-GA-CO	WF1400	(1) Copper Gasket	CALL
0606513	WF1700-GA-CO	WF1700	(1) Copper Gasket	CALL
0606514	WF1900-GA-CO	WF1900	(1) Copper Gasket	CALL
0606515	WF2200-GA-CO	WF2200	(1) Copper Gasket	CALL
0606516	WF2700-GA-CO	WF2700	(1) Copper Gasket	CALL

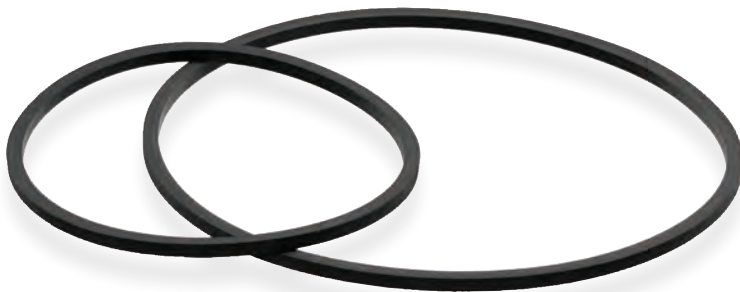
CF Viton® Gaskets

Materials:

- Fluorocarbon elastomer

Product Notes:

- Multi-use seal
- Temperature range: -70°C up to 150°C (intermittent use to 200°C)
- Pressure range: HV (approx. 1x10⁻⁸ Torr)



PART #	REFERENCE ID	USE WITH FLANGE	DESCRIPTION	UNIT PRICE
0604000	CF133-GA-VT	CF133	(5) Viton® Gaskets	\$16.00
0604001	CF212-GA-VT	CF212	(5) Viton® Gaskets	\$19.50
0604002	CF275-GA-VT	CF275	(5) Viton® Gaskets	\$19.50
0604003	CF338-GA-VT	CF338	(1) Viton® Gasket	\$12.00
0604004	CF450-GA-VT	CF450	(1) Viton® Gasket	\$14.50
0604005	CF462-GA-VT	CF462	(1) Viton® Gasket	\$16.00
0604006	CF600-GA-VT	CF600	(1) Viton® Gasket	\$19.50
0604007	CF675-GA-VT	CF675	(1) Viton® Gasket	\$18.00
0604008	CF800-GA-VT	CF800	(1) Viton® Gasket	\$25.00
0604009	CF1000-GA-VT	CF1000	(1) Viton® Gasket	\$31.00
0604010	CF1200-GA-VT	CF1200	(1) Viton® Gasket	\$50.00
0604011	CF1325-GA-VT	CF1325	(1) Viton® Gasket	CALL
0604012	CF1400-GA-VT	CF1400	(1) Viton® Gasket	CALL
0604013	CF1450-GA-VT	CF1450	(1) Viton® Gasket	\$50.00
0604014	CF1650-GA-VT	CF1650	(1) Viton® Gasket	\$50.00

Wire Seal Viton® Gaskets

Materials:

- Fluorocarbon elastomer

Product Notes:

- Multi-use seal
- Temperature range: -70°C up to 150°C (intermittent use to 200°C)
- Pressure range: HV (approx. 1x10⁻⁸ Torr)



PART #	REFERENCE ID	USE WITH FLANGE	DESCRIPTION	UNIT PRICE
0606521	WF1200-GA-VT	WF1200	(1) Viton® Gasket	\$45.00
0606522	WF1400-GA-VT	WF1400	(1) Viton® Gasket	\$45.00
0606523	WF1700-GA-VT	WF1700	(1) Viton® Gasket	\$50.00
0606524	WF1900-GA-VT	WF1900	(1) Viton® Gasket	\$54.00
0606525	WF2200-GA-VT	WF2200	(1) Viton® Gasket	\$60.00
0606526	WF2700-GA-VT	WF2700	(1) Viton® Gasket	\$65.00

CF and Wire Seal Flanges

ANCORP manufactures flanges for our own use as we manufacture modular fittings (tee's, elbows and nipples) valves, feedthroughs, chambers and other components. We offer these same flanges for those customers that have in-house welding capabilities and desire to customize their system or components themselves.



All ANCORP CF flanges are manufactured to industry specifications to ensure compatibility with other manufacturer's flanges.

Features:

- Reusable flanges
- All-metal or elastomer seals
- Sexless flanges - CF flange system
- Rotatable flanges for easier bolt hole alignment - CF flange system
- Tapped or clearance bolt holes available
- Adapters to other flange systems available
- Compatible with U.S. Standard (imperial) and metric measurements
- Interchangeable with other ConFlat® style flanges

Specifications:

- Vacuum rated to 1×10^{-13} Torr. with Copper Seals
- Leak rating $< 1 \times 10^{-9}$ std. cc/s helium
- Temperature range: -200°C to 450°C with Copper Seals
- Standard materials:
 - Flanges and fittings: 304L stainless steel
 - Seals: OFHC copper for ultra high vacuum (UHV) or Viton® for high vacuum (HV)
- Standard sizes:
 - CF flanges outer diameter: 1 1/3 inches to 16 1/2 inches (for tubing diameter 1/4 inches up to 14 inches)
 - Wire seal flanges outer diameter: 12 3/8 inches up to 27 1/8 inches (for tubing diameter 10 inches up to 24 inches)

CF Weld Flanges

These flanges are manufactured with a weld prep and tubing bore for immediate installation on your system with no additional alteration. ANCORP offers CF weld flanges in two designs; fixed and rotatable. Fixed flanges have a set bolt hole orientation while rotatable flanges have a two piece design allowing for bolt hole rotation to ease bolt alignment when



mating the two flanges. Fixed and rotatable flanges have two bolt hole options; clearance or tapped bolt holes. Clearance bolt holes allow for unrestricted passage of a bolt through the flanges. The bolt is then tightened with a nut on the back side of the flange assembly. Tapped bolt holes are threaded to receive and tighten the bolt directly and do not utilize a nut. Standard CF weld flanges are manufactured of 304L stainless steel. Other materials are available on request.

CF Blank Flanges

CF Blank flanges are manufactured with no weld prep and no tubing bore. Blank flanges are commonly used to close unused ports or they are altered by customers with their own custom machining capability for a special use. **ANCORP** offers CF blank flanges in two designs; fixed and rotatable. Fixed flanges have a set bolt hole orientation while rotatable flanges have a two piece design allowing for bolt hole rotation to ease bolt alignment when mating the two flanges.



Fixed and rotatable flanges have two bolt hole options: clearance or tapped bolt holes. Clearance bolt holes allow for unrestricted passage of a bolt through the flanges. The bolt is then tightened with a nut on the back side of the flange assembly. Tapped bolt holes are threaded to receive and tighten the bolt directly and do not utilize a nut. Standard CF blank flanges are manufactured of 304L stainless steel. Other materials are available on request.

Wire Seal Weld Flanges

Wire Seal Weld flanges are manufactured with a weld prep and tubing bore for immediate installation on your system with no additional alteration. Wire seal flanges are available in two general designs: male and female. Female flanges accept the sealing gasket while the male flange has a protruding circular ridge that fits into the gasket groove on the receiving female flange. Standard wire seal bored flanges are manufactured of 304L stainless steel. Other materials are available on request.



Wire Seal Blank Flanges

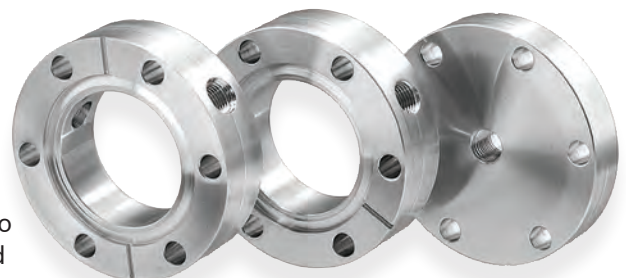
Wire Seal Blank flanges are manufactured with no weld prep and no tubing bore. Blank flanges are commonly used to close unused ports or they are altered by customers with their own custom machining capability for a special use. Wire seal flanges are available in two general designs: male and female.

Female flanges accept the sealing gasket while the male flange has a protruding circular ridge that fits into the gasket groove on the receiving female flange. Standard wire seal blank flanges are manufactured of 304L stainless steel. Other materials are available on request.



CF Special Purpose Flanges

CF Special Purpose flanges can serve a variety of useful functions in your vacuum system. Adapt directly from a larger CF to a smaller flange, from a single or double-sided CF to one or two female NPT side ports, or a double-sided CF with a CF133 machined side port. These flanges are ideal for adding vacuum accessories to your system such as measurement devices, shutters and valves.



CF 133 – 1.33 inches O.D.
UHV Flanges

2

CF133 Flanges



Product Features:

- Designed to fit standard inch tubing O.D.'s
- Self-aligning
- Internal weld
- Sexless flanges
- Rotatable flanges for easier bolt hole alignment
- Tapped and clearance bolt holes available
- Blank flanges to close unused ports or custom modify
- Interchangeable with other ConFlat® style flanges
- Adapters to other flange systems available

Product Specifications:

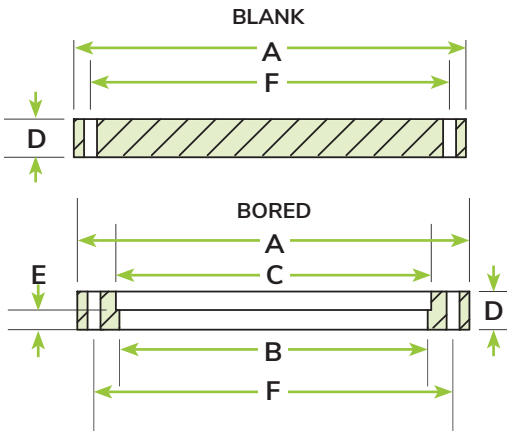
- Pressure range: UHV (approx. 1×10^{-13} Torr)
- Temperature range: -200°C up to 450°C
- Standard materials: 304L grade stainless steel

Options: Call for price and availability

- Metric tapped bolt holes
- Alternative materials:
316L stainless steel, aluminum, etc.

CF 133 - Fixed Flanges

2
CF133 Flanges



ORDERING NOTE: CF133 flanges are also available with a weld neck to ease welding to small diameter tubing. See pg. 2.16 - 2.18

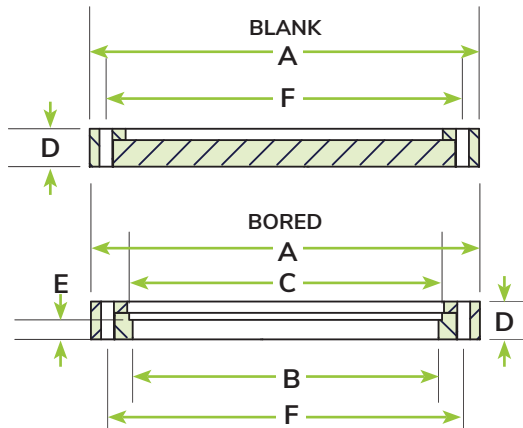
Clearance Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES		UNIT PRICE
								#	DIAMETER	
5000000	CF133-000	1.33	-	-	0.30	-	1.06	6	0.17	\$13.25
5000003	CF133-025	1.33	0.26	-	0.30	-	1.06	6	0.17	\$13.25
5000004	CF133-038	1.33	0.38	-	0.30	-	1.06	6	0.17	\$13.25
5000005	CF133-050	1.33	0.51	-	0.30	-	1.06	6	0.17	\$13.25
5000006	CF133-075	1.33	0.63	0.76	0.30	0.18	1.06	6	0.17	\$13.25

Tapped Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES		UNIT PRICE
								#	THREAD	
5000009	CF133T-000	1.33	-	-	0.30	-	1.06	6	8-32	\$17.50
5000012	CF133T-025	1.33	0.26	-	0.30	-	1.06	6	8-32	\$17.50
5000013	CF133T-038	1.33	0.38	-	0.30	-	1.06	6	8-32	\$17.50
5000014	CF133T-050	1.33	0.51	-	0.30	-	1.06	6	8-32	\$17.50
5000015	CF133T-075	1.33	0.63	0.76	0.30	0.18	1.06	6	8-32	\$17.50

CF 133 - Rotatable Flanges



2
CF133 Flanges

Clearance Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES		UNIT PRICE
								#	DIAMETER	
5000018	CF133R-000	1.33	-	-	0.30	-	1.06	6	0.17	\$14.50
5000021	CF133R-025	1.33	0.26	-	0.30	-	1.06	6	0.17	\$14.50
5000022	CF133R-038	1.33	0.38	-	0.30	-	1.06	6	0.17	\$14.50
5000023	CF133R-050	1.33	0.51	-	0.30	-	1.06	6	0.17	\$14.50
5000024	CF133R-075	1.33	0.63	0.76	0.30	0.18	1.06	6	0.17	\$14.50

Tapped Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES		UNIT PRICE
								#	THREAD	
5000027	CF133RT-000	1.33	-	-	0.30	-	1.06	6	8-32	\$19.00
5000030	CF133RT-025	1.33	0.26	-	0.30	-	1.06	6	8-32	\$19.00
5000031	CF133RT-038	1.33	0.38	-	0.30	-	1.06	6	8-32	\$17.50
5000032	CF133RT-050	1.33	0.51	-	0.30	-	1.06	6	8-32	\$19.00
5000033	CF133RT-075	1.33	0.63	0.76	0.30	0.18	1.06	6	8-32	\$18.50

CF 133 Flange Hardware

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
0604020	CF133-GA-CO	(10) Copper Gaskets	\$16.00
0604000	CF133-GA-VT	(5) Viton® Gaskets	\$16.00
0605105	CF133-HBK	(25) Bolt, Nut & Washer Kit 8-32x3/4 in.	\$11.00
0605181	CF133-HBK-SP	(25) Silver Plated Bolt, Nut & Washer Kit; 8-32x3/4 in.	\$28.00
0605106	CF133-HTBK	(25) Bolt & Washer Kit; 8-32x1/2 in.	\$8.00
0605182	CF133-HTBK-SP	(25) Silver Plated Bolt & Washer Kit; 8-32x1/2 in.	\$20.00
0605107	CF133-HPBK	(12) Plate Nuts, (24) Bolts & Washers; 8-32x3/4 in.	\$35.00
0605248	CF133-HPBK-SP	(12) Plate Nuts, (24) 8-32x3/4 in. Silver Plated Hex Socket Head Bolt & Washer Kit	\$35.00
0605108	CF133-PN	(24) Plate Nuts; 8-32	\$35.00
0605208	ASTL	Bolt thread lubricant eliminates galling of bolt and nut or tapped bolt hole	\$12.50

CF 133 – 1.33 inches O.D. UHV Flanges with Weld Neck

2

CF 133 Flanges



Product Features:

- Designed to fit standard inch tubing O.D.'s
- Self-aligning
- External weld
- Available with and without 0.060 weld prep
- Sexless flanges
- Rotatable flanges for easier bolt hole alignment
- Tapped and clearance bolt holes available
- Blank flanges to close unused ports or custom modify
- Interchangeable with other ConFlat® style flanges

Product Specifications:

- Pressure range: UHV (approx. 1×10^{-13} Torr)
- Temperature range: -200°C up to 450°C
- Standard materials: 304L grade stainless steel

Options: Call for price and availability

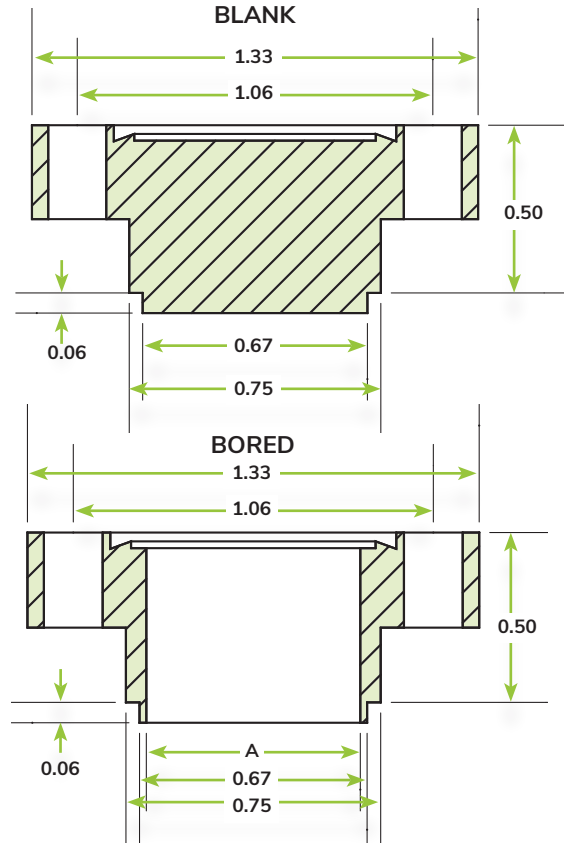
- Metric tapped bolt holes
- Alternative materials:
316L stainless steel, aluminum, etc.

TECH TIP



CF133 flanges with weld neck ease welding to small diameter tubing and lessen the possibility that the heat from welding will warp the flange.

CF 133 - Fixed Flanges Weld Neck



2

CF 133 Flanges

Clearance Bolt Holes

PART #	REFERENCE ID	A (in)	BOLT HOLES		UNIT PRICE
			#	DIAMETER	
5000001	CF133-000-WN	-	6	0.17	\$13.25
5000007	CF133-075-WN	0.63	6	0.17	\$13.25

Tapped Bolt Holes

PART #	REFERENCE ID	A (in)	BOLT HOLES		UNIT SALES
			#	THREAD	
5000010	CF133T-000-WN	-	6	8-32	\$17.50
5000016	CF133T-075-WN	0.63	6	8-32	\$17.50

CF 133 - Fixed Flanges Weld Neck with Butt Weld

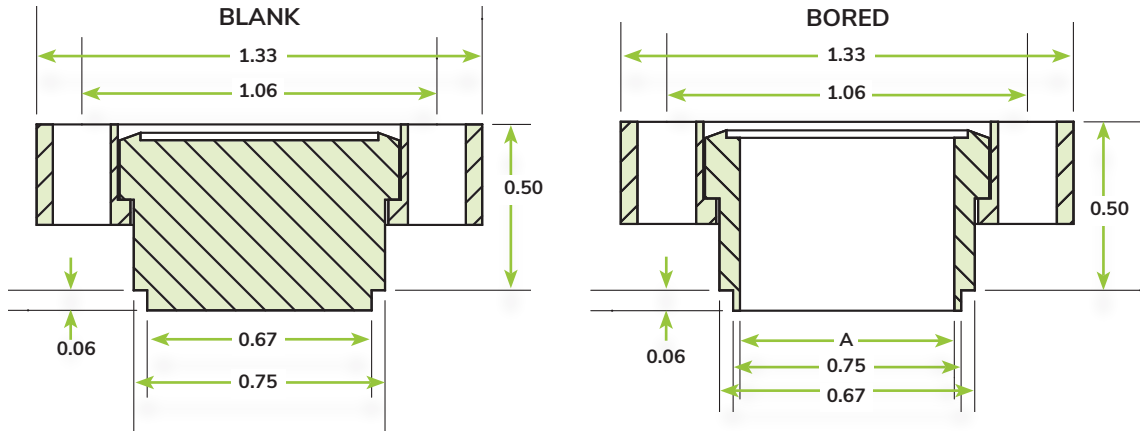
Clearance Bolt Holes

PART #	REFERENCE ID	A (in)	BOLT HOLES		UNIT PRICE
			#	DIAMETER	
5000002	CF133-000-WNB	-	6	0.17	\$13.25
5000008	CF133-075-WNB	0.63	6	0.17	\$13.25

Tapped Bolt Holes

PART #	REFERENCE ID	A (in)	BOLT HOLES		UNIT SALES
			#	THREAD	
5000011	CF133T-000-WNB	-	6	8-32	\$17.50
5000017	CF133T-075-WNB	0.63	6	8-32	\$17.50

CF 133 - Rotatable Flanges Weld Neck



Clearance Bolt Holes

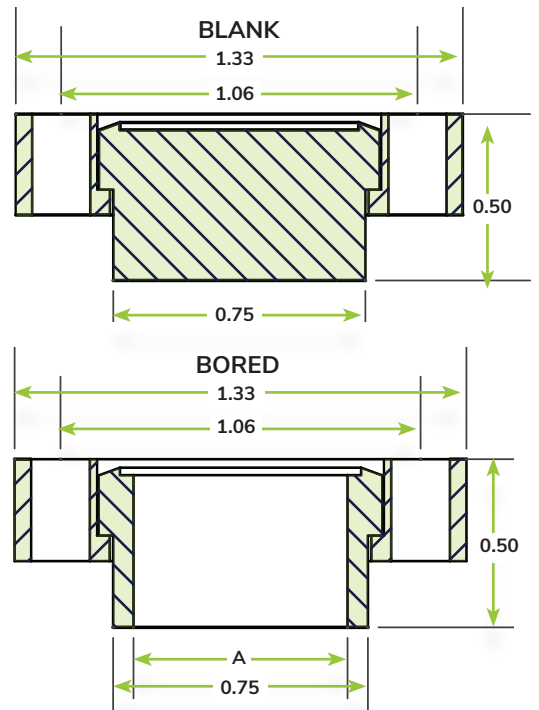
PART #	REFERENCE ID	A (in)	BOLT HOLES		UNIT PRICE
			#	DIAMETER	
5000019	CF133R-000-WN	-	6	0.17	\$14.50
5000025	CF133R-075-WN	0.63	6	0.17	\$14.50

Tapped Bolt Holes

PART #	REFERENCE ID	A (in)	BOLT HOLES		UNIT PRICE
			#	THREAD	
5000028	CF133RT-000-WN	-	6	8-32	\$19.00
5000034	CF133RT-075-WN	0.63	6	8-32	\$18.50



CF 133 - Rotatable Flanges Weld Neck with Butt Weld



Clearance Bolt Holes

PART #	REFERENCE ID	A (in)	BOLT HOLES		UNIT PRICE
			#	DIAMETER	
5000020	CF133R-000-WNB	-	6	0.17	\$14.50
5000026	CF133R-075-WNB	0.63	6	0.17	\$14.50

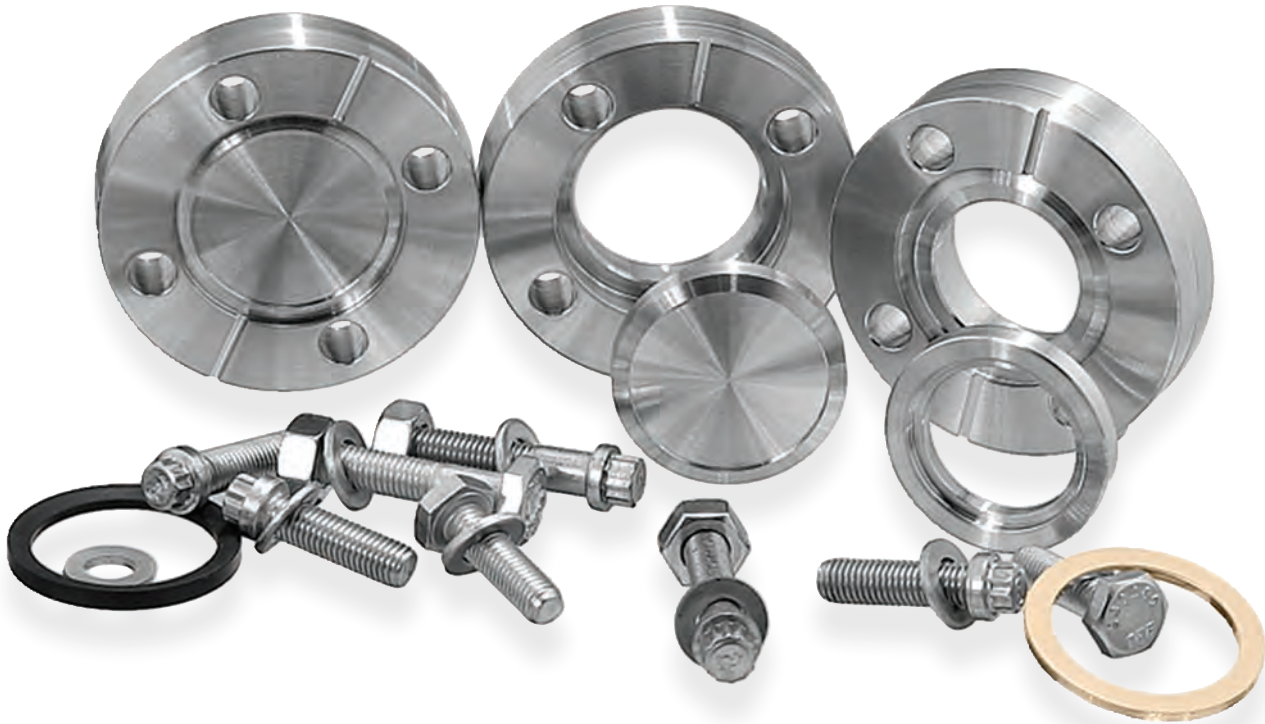
Tapped Bolt Holes

PART #	REFERENCE ID	A (in)	BOLT HOLES		UNIT PRICE
			#	THREAD	
5000029	CF133RT-000-WNB	-	6	8-32	\$19.00
5000035	CF133RT-075-WNB	0.63	6	8-32	\$18.50

CF 212 - 2.125 inches O.D. UHV Flanges

2

CF 212 Flanges



Product Features:

- Designed to fit standard inch tubing O.D.'s
- Self-aligning
- Internal weld
- Sexless flanges
- Rotatable flanges for easier bolt hole alignment
- Tapped and clearance bolt holes available
- Blank flanges to close unused ports or custom modify
- Interchangeable with other ConFlat® style flanges
- Adapters to other flange systems available

Product Specifications:

- Pressure range: UHV (approx. 1×10^{-13} Torr)
- Temperature range: -200°C up to 450°C
- Standard materials: 304L stainless steel

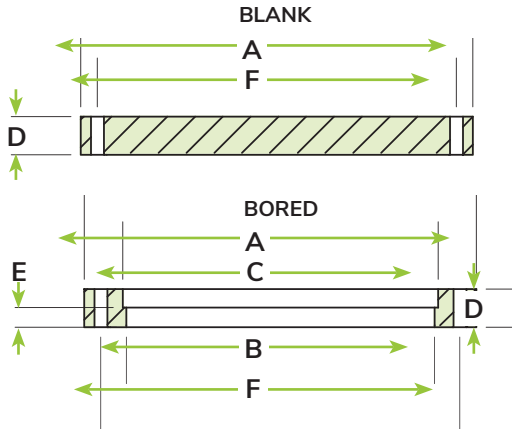
Options: Call for price and availability

- Metric tapped bolt holes
- Alternative materials: 316L stainless steel, aluminum, etc.

CF 212 - Fixed Flanges

2

CF 212 Flanges



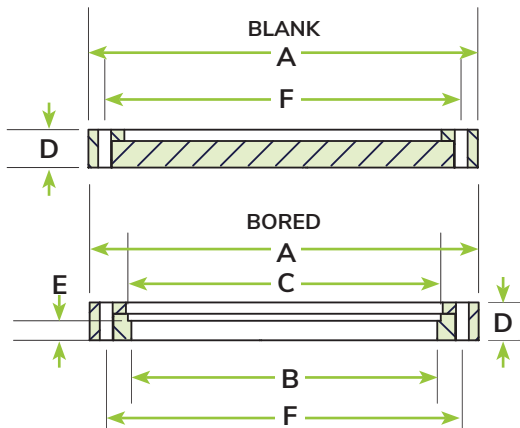
Clearance Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES		UNIT PRICE
								#	DIAMETER	
5000036	CF212-000	2.12	-	-	0.47	-	1.63	4	0.27	\$16.00
5000037	CF212-025	2.12	0.26	-	0.47	-	1.63	4	0.27	\$16.00
5000038	CF212-050	2.12	0.51	-	0.47	-	1.63	4	0.27	\$16.00
5000039	CF212-075	2.12	0.63	0.76	0.47	0.17	1.63	4	0.27	\$16.00
5000040	CF212-100	2.12	0.94	1.01	0.47	0.17	1.63	4	0.27	\$16.00

Tapped Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES		UNIT PRICE
								#	THREAD	
5000041	CF212T-000	2.12	-	-	0.47	-	1.63	4	1/4-28	\$21.00
5000042	CF212T-025	2.12	0.26	-	0.47	-	1.63	4	1/4-28	\$21.00
5000043	CF212T-050	2.12	0.51	-	0.47	-	1.63	4	1/4-28	\$21.00
5000044	CF212T-075	2.12	0.63	0.76	0.47	0.17	1.63	4	1/4-28	\$21.00
5000045	CF212T-100	2.12	0.94	1.01	0.47	0.17	1.63	4	1/4-28	\$21.00

CF 212 - Rotatable Flanges



2
CF 212 Flanges

Clearance Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES		UNIT PRICE
								#	DIAMETER	
5000046	CF212R-000	2.12	-	-	0.47	-	1.63	4	0.27	\$22.00
5000047	CF212R-025	2.12	0.26	-	0.47	-	1.63	4	0.27	\$18.00
5000048	CF212R-050	2.12	0.51	-	0.47	-	1.63	4	0.27	\$18.00
5000049	CF212R-075	2.12	0.63	0.76	0.47	0.17	1.63	4	0.27	\$18.00
5000911	CF212R-100	2.12	0.94	1.01	0.47	0.17	1.63	4	0.27	\$18.00

Tapped Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES		UNIT PRICE
								#	THREAD	
5000050	CF212RT-000	2.12	-	-	0.47	-	1.63	4	1/4-28	\$24.00
5000052	CF212RT-025	2.12	0.26	-	0.47	-	1.63	4	1/4-28	\$24.00
5000053	CF212RT-050	2.12	0.51	-	0.47	-	1.63	4	1/4-28	\$24.00
5000054	CF212RT-075	2.12	0.63	0.76	0.47	0.17	1.63	4	1/4-28	\$24.00
5000055	CF212RT-100	2.12	0.94	1.01	0.47	0.17	1.63	4	1/4-28	\$24.00

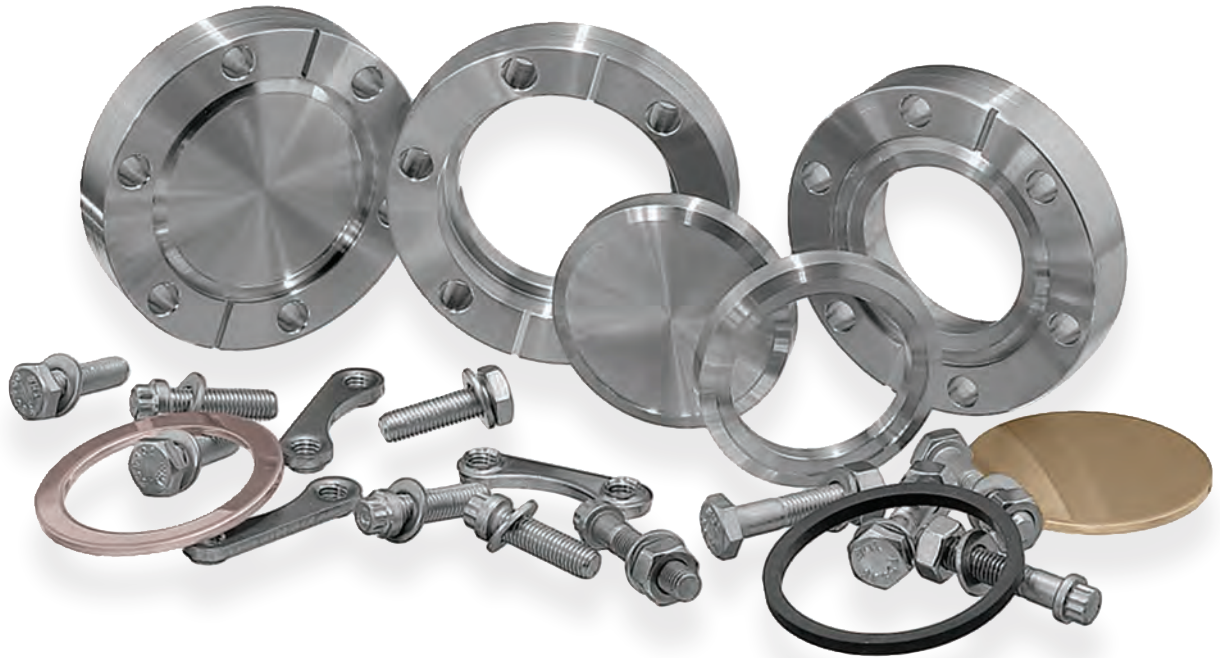
CF 212 Flange Hardware

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
0604022	F133-GA-CO	(10) Copper Gaskets	\$20.00
0604001	CF212-GA-VT	(5) Viton® Gaskets	\$19.50
0605109	CF212-HBK	(25) Bolt, Nut & Washer Kit 1/4 - 28 x 1 1/4 in.	\$14.00
0605110	CF212-HTBK	(25) Bolt & Washer Kit; 1/4-28 x 1 1/4 in.	\$12.00
0605111	CF212-12BK	(25) 12-Point Bolt, Nut & Washer Kit 1/4 - 28 x 1 1/4 in.	\$19.00
0605183	CF212-12BK-SP	(25) Silver Plated 12-Point Bolt, Nut & Washer Kit; 1/4 - 28 x 1 1/4 in	\$32.00
0605112	CF212-12TBK	(25) 12-Point Bolt & Washer Kit 1/4 - 28 x 7/8 in.	\$17.00
0605184	CF212-12TBK-SP	(25) Silver Plated 12-Point Bolt & Washer Kit 1/4 - 28 x 7/8 in.	\$24.00
0605113	12-POINT WRENCH	(1) Fits CF 12-Point bolts	\$27.00
0605208	ASTL	(1) Bolt thread lubricant eliminates galling of bolt and nut or tapped bolt hole	\$12.50

CF 275 - 2.75 inches O.D. UHV Flanges

2

CF 275 Flanges

**Product Features:**

- Designed to fit standard inch tubing O.D.'s
- Self-aligning
- Internal weld
- Sexless flanges
- Rotatable flanges for easier bolt hole alignment
- Tapped and clearance bolt holes available
- Blank flanges to close unused ports or custom modify
- Interchangeable with other ConFlat® style flanges
- Adapters to other flange systems available

Product Specifications:

- Pressure range: UHV (approx. 1×10^{-13} Torr)
- Temperature range: -200°C up to 450°C
- Standard materials: 304L grade stainless steel

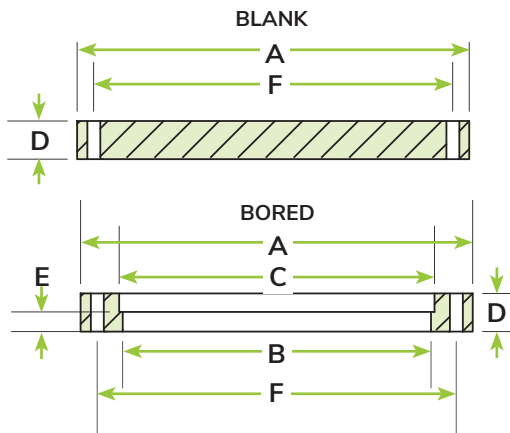
Options: Call for price and availability

- Metric tapped bolt holes
- Alternative materials:
316L stainless steel, aluminum, etc.

CF 275 - Fixed Flanges

2

CF 275 Flanges



Clearance Bolt Holes

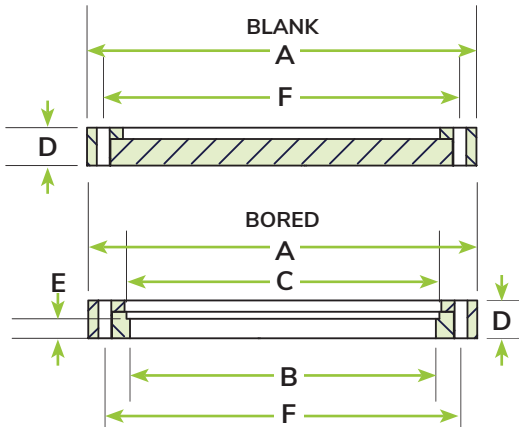
PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	DIAMETER	UNIT PRICE
5000056	CF275-000	2.72	-	-	0.50	-	2.31	6	0.27	\$15.50
5000057	CF275-025	2.72	0.26	-	0.50	-	2.31	6	0.27	\$15.50
5000058	CF275-050	2.72	0.51	-	0.50	-	2.31	6	0.27	\$15.50
5000059	CF275-075	2.72	0.63	0.76	0.50	0.21	2.31	6	0.27	\$15.50
5000060	CF275-100	2.72	0.88	1.01	0.50	0.21	2.31	6	0.27	\$15.50
5000061	CF275-125	2.72	1.13	1.26	0.50	0.21	2.31	6	0.27	\$15.50
5000062	CF275-150	2.72	1.44	1.51	0.50	0.21	2.31	6	0.27	\$15.50
5000063	CF275-162	2.72	1.50	1.63	0.50	0.21	2.31	6	0.27	\$15.50

Tapped Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	THREAD	UNIT PRICE
5000064	CF275T-000	2.72	-	-	0.50	-	2.31	6	1/4-28	\$23.00
5000065	CF275T-025	2.72	0.26	-	0.50	-	2.31	6	1/4-28	\$23.00
5000066	CF275T-050	2.72	0.51	-	0.50	-	2.31	6	1/4-28	\$23.00
5000067	CF275T-075	2.72	0.63	0.76	0.50	0.21	2.31	6	1/4-28	\$23.00
5000068	CF275T-100	2.72	0.88	1.01	0.50	0.21	2.31	6	1/4-28	\$23.00
5000069	CF275T-125	2.72	1.13	1.26	0.50	0.21	2.31	6	1/4-28	\$23.00
5000070	CF275T-150	2.72	1.44	1.51	0.50	0.21	2.31	6	1/4-28	\$23.00
5000071	CF275T-162	2.72	1.50	1.63	0.50	0.21	2.31	6	1/4-28	\$23.00

CF 275 - Rotatable Flanges

2
CF 275 Flanges



Clearance Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	DIAMETER	UNIT PRICE
5000072	CF275R-000	2.72	-	-	0.50	-	2.31	6	0.27	\$22.00
5000073	CF275R-025	2.72	0.26	-	0.50	-	2.31	6	0.27	\$20.50
5000074	CF275R-050	2.72	0.51	-	0.50	-	2.31	6	0.27	\$22.00
5000075	CF275R-075	2.72	0.63	0.76	0.50	0.21	2.31	6	0.27	\$22.00
5000076	CF275R-100	2.72	0.88	1.01	0.50	0.21	2.31	6	0.27	\$22.00
5000077	CF275R-125	2.72	1.13	1.26	0.50	0.21	2.31	6	0.27	\$22.00
5000078	CF275R-150	2.72	1.44	1.51	0.50	0.21	2.31	6	0.27	\$22.00
5000079	CF275R-162	2.72	1.50	1.63	0.50	0.21	2.31	6	0.27	\$22.00

Tapped Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	THREAD	UNIT PRICE
5000080	CF275RT-000	2.72	-	-	0.50	-	2.31	6	1/4-28	\$30.00
5000081	CF275RT-025	2.72	0.26	-	0.50	-	2.31	6	1/4-28	\$30.00
5000082	CF275RT-050	2.72	0.51	-	0.50	-	2.31	6	1/4-28	\$30.00
5000083	CF275RT-075	2.72	0.63	0.76	0.50	0.21	2.31	6	1/4-28	\$30.00
5000084	CF275RT-100	2.72	0.88	1.01	0.50	0.21	2.31	6	1/4-28	\$30.00
5000085	CF275RT-125	2.72	1.13	1.26	0.50	0.21	2.31	6	1/4-28	\$30.00
5000086	CF275RT-150	2.72	1.44	1.51	0.50	0.21	2.31	6	1/4-28	\$29.00
5000087	CF275RT-162	2.72	1.50	1.63	0.50	0.21	2.31	6	1/4-28	\$30.00

CF 275 Flange Hardware

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
0604024	CF275-GA-CO	(10) Copper Gaskets	\$23.00
0604025	CF275-GA-CO-SD	(10) Copper Gaskets; Solid	\$23.00
0604002	CF275-GA-VT	(5) Viton® Gaskets	\$19.50
0605114	CF275-HBK	(25) Bolt, Nut & Washer Kit; 1/4-28x1 1/4 in.	\$14.00
0605115	CF275-HTBK	(25) Bolt & Washer Kit, 1/4-28x1 in.	\$12.00
0605116	CF275-12BK	(25) 12-point Bolt, Nut & Washer Kit; 1/4-28x1 1/4 in.	\$19.00
0605186	CF275-12BK-SP	(25) Silver Plated 12-point Bolt, Nut & Washer Kit; 1/4-28x1 1/4 in.	\$32.00
0605117	CF275-12TBK	(25) 12-point Bolt & Washer Kit; 1/4-28x7/8 in.	\$17.00
0605185	CF275-12TBK-SP	(25) Silver Plated 12-point Bolt & Washer Kit; 1/4-28x7/8 in.	\$24.00
0605118	CF275-HPBK	(12) Plate Nuts, (24) Bolts & Washers; 1/4-28x1 1/4 in.	\$39.00
0605119	CF275-PN	(24) Plate Nuts; 1/4-28	\$40.00
0605120	CF275-12PBK	(12) Plate Nuts, (24) 12-point Bolts & Washers; 1/4-28x1 1/4 in.	\$52.00
0605249	CF275-12PBK-SP	(12) Plate Nuts, (24) Silver Plated 12-point Bolts & Washers; 1/4-28x1 1/4 in.	\$62.00
0605113	12-POINT WRENCH	(1) Fits CF 12-point bolts	\$27.00
0605208	ASTL	(1) Bolt thread lubricant eliminates galling of bolt and nut or tapped bolt hole	\$12.50

CF 338 - 3.375 inches O.D. UHV Flanges

2
CF 338 Flanges

Product Features:

- Designed to fit standard inch tubing O.D.'s
- Self-aligning
- Internal weld
- Sexless flanges
- Rotatable flanges for easier bolt hole alignment
- Tapped and clearance bolt holes available
- Blank flanges to close unused ports or custom modify
- Interchangeable with other ConFlat® style flanges
- Adapters to other flange systems available



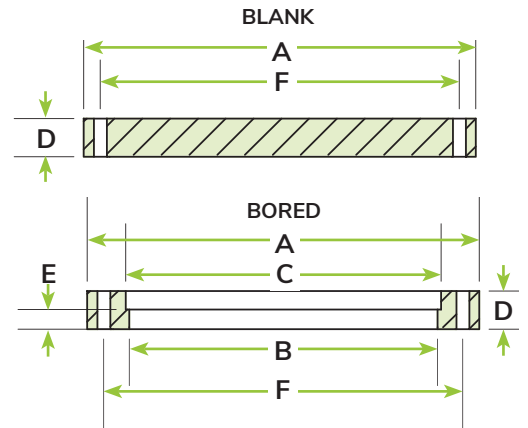
Product Specifications:

- Pressure range: UHV (approx. 1×10^{-13} Torr)
- Temperature range: -200°C up to 450°C
- Standard materials: 304L stainless steel

Options: Call for price and availability

- Metric tapped bolt holes
- Alternative materials: 316L stainless steel, aluminum, etc.

CF 338 - Fixed Flanges



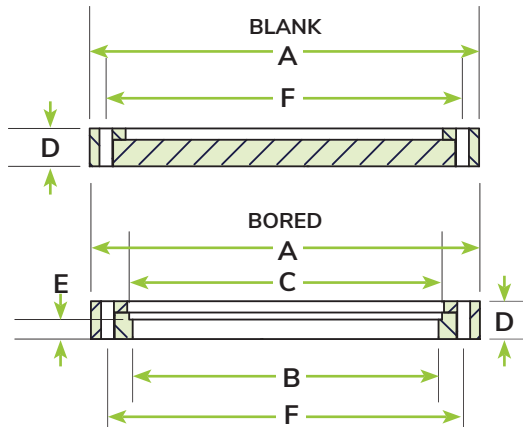
Clearance Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	DIAMETER	UNIT PRICE
5000088	CF338-000	3.37	-	-	0.625	-	2.850	8	0.332	\$40.00
5000089	CF338-150	3.37	1.375	1.510	0.625	0.225	2.850	8	0.332	\$40.00
5000090	CF338-200	3.37	1.875	2.010	0.625	0.225	2.850	8	0.332	\$40.00

Tapped Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	THREAD	UNIT PRICE
5000091	CF338T-000	3.37	-	-	0.625	-	2.850	8	5/16-24	\$49.00
5000092	CF338T-150	3.37	1.375	1.510	0.625	0.225	2.850	8	5/16-24	\$49.00
5000093	CF338T-200	3.37	1.875	2.010	0.625	0.225	2.850	8	5/16-24	\$49.00

CF 338 - Rotatable Flanges



2

CF 338 Flanges

Clearance Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	DIAMETER	UNIT PRICE
5000094	CF338R-000	3.37	-	-	0.680	-	2.850	8	0.332	\$44.00
5000095	CF338R-150	3.37	1.375	1.510	0.680	0.225	2.850	8	0.332	\$44.00
5000096	CF338R-200	3.37	1.875	2.010	0.680	0.225	2.850	8	0.332	\$44.00

Tapped Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	THREAD	UNIT PRICE
5000097	CF338RT-000	3.37	-	-	0.680	-	2.850	8	5/16-24	\$54.00
5000098	CF338RT-150	3.37	1.375	1.510	0.680	0.225	2.850	8	5/16-24	\$54.00
5000099	CF338RT-200	3.37	1.875	2.010	0.680	0.225	2.850	8	5/16-24	\$54.00

CF 338 Flange Hardware

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
0604027	CF338-GA-CO-SD	(10) Copper Gaskets	\$26.00
0604003	CF338-GA-VT	(1) Viton® Gasket	\$12.00
0605121	CF338-HBK	(25) Bolt, Nut & Washer Kit; 5/16-24x1 3/4 in.	\$19.00
0605122	CF338-HBTK	(25) Bolt & Washer Kit; 5/16-24x1 1/4 in.	\$11.00
0605123	CF338-12BK	(25) 12-point Bolt, Nut & Washer Kit; 5/16-24x1 3/4 in.	\$29.00
0605187	CF338-12BK-SP	(25) Silver Plated 12-point Bolt, Nut & Washer Kit; 5/16-24x1 3/4 in.	\$41.00
0605124	CF338-12TBK	(25) 12-point Bolt & Washer Kit; 5/16-24x1 1/4 in.	\$28.00
0605188	CF338-12TBK-SP	(25) Silver Plated 12-point Bolt & Washer Kit; 5/16-24x1 1/4 in.	\$38.00
0605125	CF338-HBPK	(16) Plate Nuts, (32) Bolts & Washers; 5/16-24x1 3/4 in.	\$59.00
0605126	CF338-PN	(24) Plate Nuts; 5/16-24	\$47.00
0605127	CF338-12PBK	(16) Plate Nuts, (32) 12-point Bolts & Washers; 5/16-24x1 3/4 in.	\$97.00
0605307	CF338-12PBK-SP	(16) Plate Nuts, (32) Silver Plated 12-point Bolts & Washers; 5/16-24x1 3/4 in.	\$97.00
0605113	12-POINT WRENCH	(1) Fits CF 12-point bolts	\$27.00
0605208	ASTL	(1) Bolt thread lubricant eliminates galling of bolt and nut or tapped bolt hole	\$12.50

CF 450 - 4.5 inches O.D. UHV Flanges

Product Features:

- Designed to fit standard inch tubing O.D.'s
- Self-aligning
- Internal weld
- Sexless flanges
- Rotatable flanges for easier bolt hole alignment
- Tapped and clearance bolt holes available
- Blank flanges to close unused ports or custom modify
- Interchangeable with other ConFlat® style flanges
- Adapters to other flange systems available



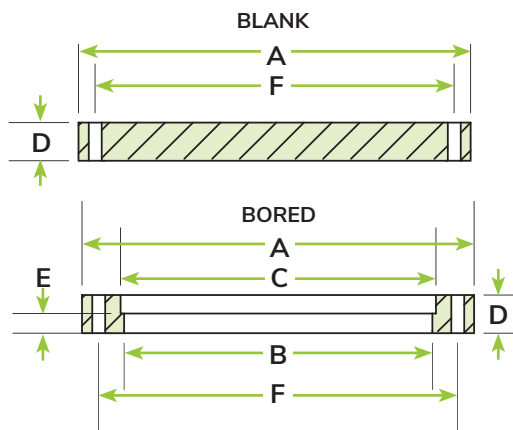
Product Specifications:

- Pressure range: UHV (approx. 1×10^{-13} Torr)
- Temperature range: -200°C up to 450°C
- Standard materials: 304L stainless steel

Options: Call for price and availability

- Metric tapped bolt holes
- Alternative materials: 316L stainless steel, aluminum, etc.

CF 450 - Fixed Flanges



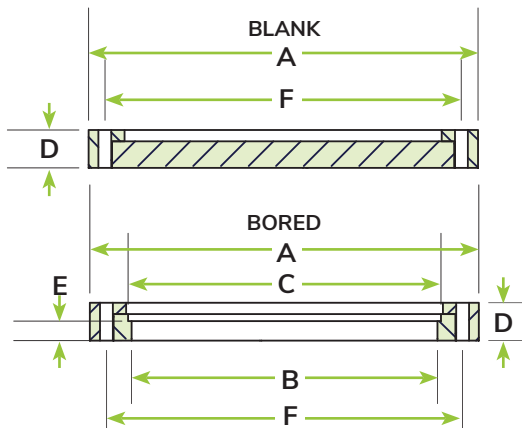
Clearance Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	DIAMETER	UNIT PRICE
5000100	CF450-000	4.47	-	-	0.68	-	3.63	8	0.332	\$57.00
5000101	CF450-150	4.47	1.38	1.51	0.68	0.38	3.63	8	0.332	\$57.00
5000102	CF450-200	4.47	1.94	2.01	0.68	0.38	3.63	8	0.332	\$57.00
5000103	CF450-250	4.47	2.44	2.51	0.68	0.38	3.63	8	0.332	\$57.00

Tapped Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	THREAD	UNIT PRICE
5000104	CF450T-000	4.47	-	-	0.68	-	3.63	8	5/16-24	\$67.00
5000105	CF450T-150	4.47	1.38	1.51	0.68	0.38	3.63	8	5/16-24	\$67.00
5000106	CF450T-200	4.47	1.94	2.01	0.68	0.38	3.63	8	5/16-24	\$67.00
5000107	CF450T-250	4.47	2.44	2.51	0.68	0.38	3.63	8	5/16-24	\$67.00

CF 450 - Rotatable Flanges



2
CF 450 Flanges

Clearance Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	DIAMETER	UNIT PRICE
5000108	CF450R-000	4.47	-	-	0.75	-	3.63	8	0.332	\$74.00
5000109	CF450R-150	4.47	1.38	1.51	0.75	0.38	3.63	8	0.332	\$74.00
5000110	CF450R-200	4.47	1.94	2.01	0.75	0.38	3.63	8	0.332	\$74.00
5000111	CF450R-250	4.47	2.44	2.51	0.75	0.38	3.63	8	0.332	\$74.00

Tapped Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	THREAD	UNIT PRICE
5000112	CF450RT-000	4.47	-	-	0.75	-	3.63	8	5/16-24	\$78.00
5000113	CF450RT-150	4.47	1.38	1.51	0.75	0.38	3.63	8	5/16-24	\$78.00
5000114	CF450RT-200	4.47	1.94	2.01	0.75	0.38	3.63	8	5/16-24	\$78.00
5000115	CF450RT-250	4.47	2.44	2.51	0.75	0.38	3.63	8	5/16-24	\$78.00

CF 450 Flange Hardware

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
0604029	CF450-GA-CO	(10) Copper Gaskets	\$34.00
0604004	CF450-GA-VT	(1) Viton® Gasket	\$14.50
0605128	CF450-HBK	(25) Bolt, Nut & Washer Kit; 5/16-24x2 in.	\$22.00
0605129	CF450-HTBK	(25) Bolt & Washer Kit; 5/16-24x1 1/4 in.	\$11.00
0605130	CF450-12BK	(25) 12-point Bolt, Nut & Washer Kit; 5/16-24x2 in.	\$33.00
0605190	CF450-12BK-SP	(25) Silver Plated 12-point Bolt, Nut & Washer Kit; 5/16-24x2 in.	\$45.00
0605131	CF450-12TBK	(25) 12-point Bolt & Washer Kit; 5/16-24x1 1/4 in.	\$28.00
0605189	CF450-12TBK-SP	(25) Silver Plated 12-point Bolt & Washer Kit; 5/16-24x1 1/4 in.	\$38.00
0605132	CF450-HPBK	(16) Plate Nuts, (32) Bolts & Washers; 5/16-24x2 in.	\$66.00
0605133	CF450-PN	(24) Plate Nuts; 5/16-24	\$49.00
0605134	CF450-12PBK	(16) Plate Nuts, (32) 12-point Bolts & Washers; 5/16-24x2 in.	\$98.00
0605308	CF450-12PBK-SP	(16) Plate Nuts, (32) Silver Plated 12-point Bolts & Washers; 5/16-24x2 in.	\$105.00
0605113	12-POINT WRENCH	(1) Fits CF 12-point bolts	\$27.00
0605208	ASTL	(1) Bolt thread lubricant eliminates galling of bolt and nut or tapped bolt hole	\$12.50

CF 462 - 4.625 inches O.D. UHV Flanges

Product Features:

- Designed to fit standard inch tubing O.D.'s
- Self-aligning
- Internal weld
- Sexless flanges
- Rotatable flanges for easier bolt hole alignment
- Tapped and clearance bolt holes available
- Blank flanges to close unused ports or custom modify
- Interchangeable with other ConFlat® style flanges
- Adapters to other flange systems available



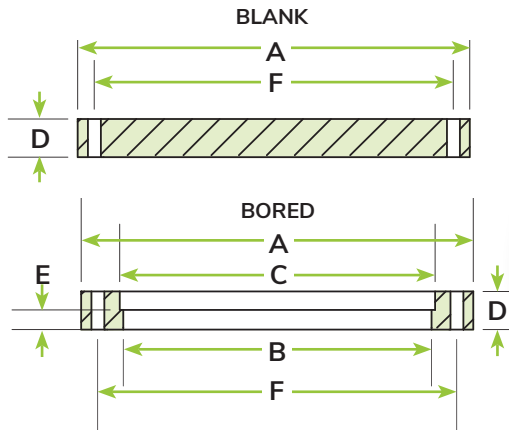
Product Specifications:

- Pressure range: UHV (approx. 1×10^{-13} Torr)
- Temperature range: -200°C up to 450°C
- Standard materials: 304L grade stainless steel

Options: Call for price and availability

- Metric tapped bolt holes
- Alternative materials: 316L stainless steel, aluminum, etc.

CF 462 - Fixed Flanges



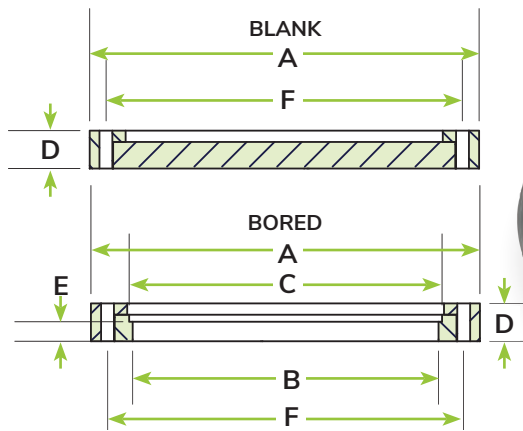
Clearance Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	DIAMETER	UNIT PRICE
5000116	CF462-000	4.62	-	-	0.75	-	4.03	10	0.332	\$65.00
5000117	CF462-250	4.62	2.38	2.51	0.75	0.38	4.03	10	0.332	\$65.00
5000118	CF462-300	4.62	2.88	3.01	0.75	0.38	4.03	10	0.332	\$65.00

Tapped Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	THREAD	UNIT PRICE
5000119	CF462T-000-T	4.62	-	-	0.75	-	4.03	10	5/16-24	\$78.00
5000120	CF462T-250	4.62	2.38	2.51	0.75	0.38	4.03	10	5/16-24	\$78.00
5000121	CF462T-300	4.62	2.88	3.01	0.75	0.38	4.03	10	5/16-24	\$78.00

CF 462 - Rotatable Flanges



2

CF 462 Flanges

Clearance Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	DIAMETER	UNIT PRICE
5000122	CF462R-000	4.62	-	-	0.810	-	4.030	10	0.332	\$80.00
5000123	CF462R-250	4.62	2.44	2.510	0.810	0.375	4.030	10	0.332	\$80.00
5000124	CF462R-300	4.62	2.94	3.010	0.810	0.375	4.030	10	0.332	\$74.00

Tapped Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	THREAD	UNIT PRICE
5000125	CF462RT-000	4.62	-	-	0.81	-	4.03	10	5/16-24	\$85.00
5000126	CF462RT-250	4.62	2.44	2.51	0.81	0.38	4.03	10	5/16-24	\$85.00
5000127	CF462RT-300	4.62	2.94	3.01	0.81	0.38	4.03	10	5/16-24	\$85.00

CF 462 Flange Hardware

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
0604031	CF462-GA-CO	(10) Copper Gaskets	\$42.00
0604005	CF462-GA-VT	(1) Viton® Gasket	\$16.00
0605135	CF462-HBK	(25) Bolt, Nut & Washer Kit; 5/16-24x2 1/4 in.	\$27.00
0605136	CF462-HTBK	(25) Bolt & Washer Kit; 5/16-24x1 1/4 in.	\$11.00
0605137	CF462-12BK	(25) 12-point Bolt, Nut & Washer Kit; 5/16-24x2 1/4 in.	\$38.00
0605192	CF462-12BK-SP	(25) Silver Plated 12-point Bolt, Nut & Washer Kit; 5/16-24x2 1/4 in.	\$52.00
0605138	CF462-12TBK	(25) 12-point Bolt & Washer Kit; 5/16-24x1 1/4 in.	\$28.00
0605191	CF462-12TBK-SP	(25) Silver Plated 12-point Bolt & Washer Kit; 5/16-24x1 1/4 in.	\$38.00
0605139	CF462-HPBK	(20) Plate Nuts, (40) Bolts & Washers; 5/16-24x2 1/4 in.	\$75.00
0605140	CF462-PN	(24) Plate Nuts; 5/16-24	\$60.00
0605141	CF462-12PBK	(20) Plate Nuts, (40) 12-point Bolts & Washers; 5/16-24x2 1/4 in.	\$95.00
0605309	CF462-12PBK-SP	(20) Plate Nuts, (40) Silver Plated 12-point Bolts & Washers; 5/16-24x2 1/4 in.	\$130.00
0605113	12-POINT WRENCH	(1) Fits CF 12-point bolts	\$27.00
0605208	ASTL	(1) Bolt thread lubricant eliminates galling of bolt and nut or tapped bolt hole	\$12.50

CF 600 - 6 inches O.D. UHV Flanges



Product Features:

- Designed to fit standard inch tubing O.D.'s
- Self-aligning
- Internal weld
- Sexless flanges
- Rotatable flanges for easier bolt hole alignment
- Tapped and clearance bolt holes available
- Blank flanges to close unused ports or custom modify
- Interchangeable with other ConFlat® style flanges
- Adapters to other flange systems available

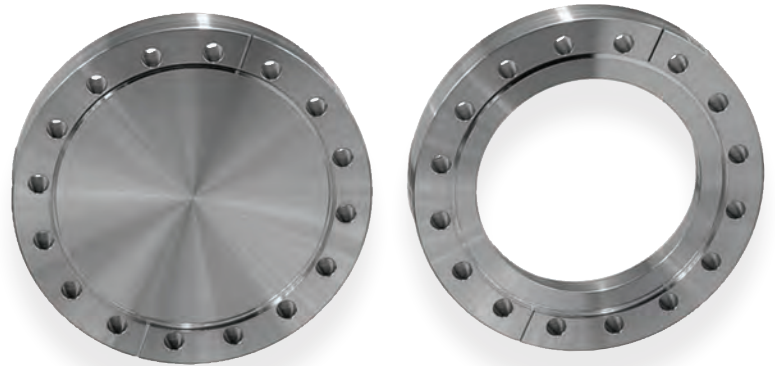
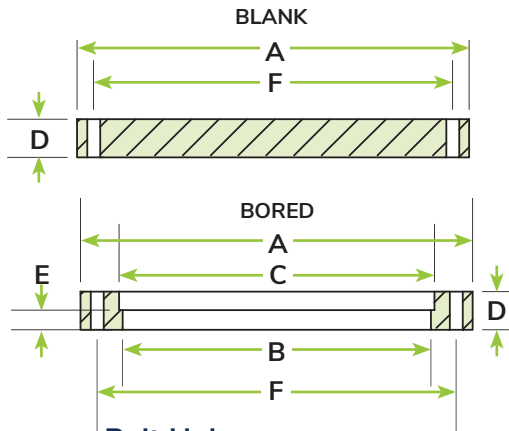
Product Specifications:

- Pressure range: UHV (approx. 1×10^{-13} Torr)
- Temperature range: -200°C up to 450°C
- Standard materials: 304L stainless steel

Options: Call for price and availability

- Metric tapped bolt holes
- Alternative materials: 316L stainless steel, aluminum, etc.

CF 600 - Fixed Flanges



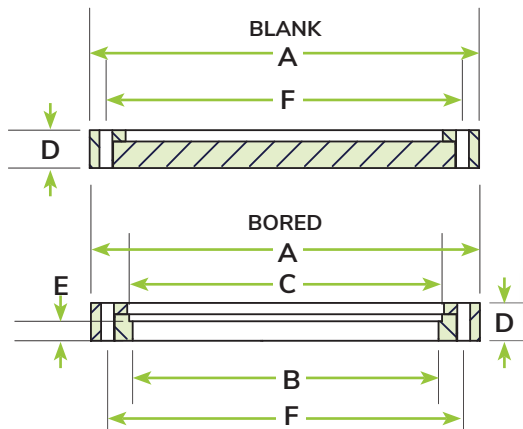
Clearance Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	DIAMETER	UNIT PRICE
5000128	CF600-000	5.97	-	-	0.78	-	5.13	16	0.332	\$83.00
5000129	CF600-400	5.97	3.92	4.02	0.78	0.44	5.13	16	0.332	\$83.00

Tapped Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	THREAD	UNIT PRICE
5000130	CF600T-000	5.97	-	-	0.78	-	5.13	16	5/16-24	\$103.00
5000131	CF600T-400	5.97	3.92	4.02	0.78	0.44	5.13	16	5/16-24	\$103.00

CF 600 - Rotatable Flanges



2
CF 600 Flanges

Clearance Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	DIAMETER	UNIT PRICE
5000132	CF600R-000	5.97	-	-	0.84	-	5.13	16	0.332	\$96.00
5000133	CF600R-400	5.97	3.81	4.01	0.84	0.44	5.13	16	0.332	\$96.00

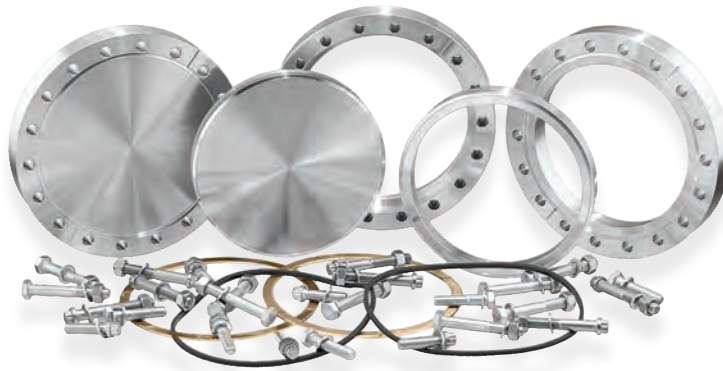
Tapped Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	THREAD	UNIT PRICE
5000134	CF600RT-000	5.97	-	-	0.84	-	5.13	16	5/16-24	\$118.00
5000135	CF600RT-400	5.97	3.81	4.01	0.84	0.44	5.13	16	5/16-24	\$118.00

CF 600 Flange Hardware

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
0604033	CF600-GA-CO	(10) Copper Gaskets	\$51.00
0604006	CF600-GA-VT	(1) Viton® Gasket	\$19.50
0605142	CF600-HBK	(25) Bolt, Nut & Washer Kit; 5/16-24x2 1/4 in.	\$27.00
0605144	CF600-HTBK	(25) Bolt & Washer Kit; 5/16-24x1 1/4 in.	\$11.00
0605145	CF600-12BK	(25) 12-point Bolt, Nut & Washer Kit; 5/16-24x2 1/4 in.	\$38.00
0605194	CF600-12BK-SP	(25) Silver Plated 12-point Bolt, Nut & Washer Kit; 5/16-24x2 1/4 in.	\$52.00
0605147	CF600-12TBK	(25) 12-point Bolt & Washer Kit; 5/16-24x1 1/4 in.	\$28.00
0605193	CF600-12TBK-SP	(25) Silver Plated 12-point Bolt & Washer Kit; 5/16-24x1 1/4 in.	\$38.00
0605148	CF600-HPBK	(16) Plate Nuts, (32) Bolts & Washers; 5/16-24x2 1/4 in.	\$70.00
0605152	CF600-PN	(24) Plate Nuts; 5/16-24	\$49.00
0605150	CF600-12PBK	(16) Plate Nuts, (32) 12-point Bolts & Washers; 5/16-24x2 1/4 in.	\$105.00
0605265	CF600-12PBK-SP	(16) Plate Nuts, (32) Silver Plated 12-point Bolts & Washers; 5/16-24x2 1/4 in.	\$110.00
0605113	12-POINT WRENCH	(1) Fits CF 12-point bolts	\$27.00
0605208	ASTL	(1) Bolt thread lubricant eliminates galling of bolt and nut or tapped bolt hole	\$12.50

CF 675 - 6.75 inches O.D. UHV Flanges



Product Features:

- Designed to fit standard inch tubing O.D.'s
- Self-aligning
- Internal weld
- Sexless flanges
- Rotatable flanges for easier bolt hole alignment
- Tapped and clearance bolt holes available
- Blank flanges to close unused ports or custom modify
- Interchangeable with other ConFlat® style flanges
- Adapters to other flange systems available

Product Specifications:

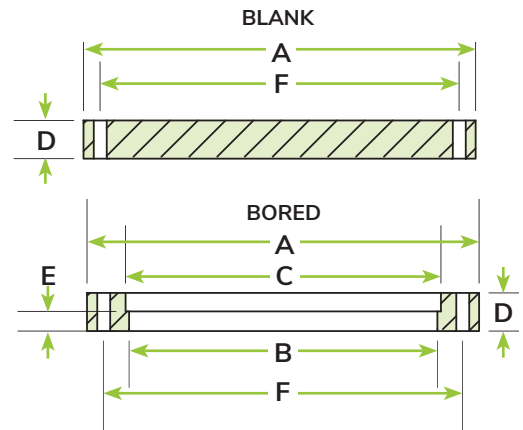
- Pressure range: UHV (approx. 1×10^{-13} Torr)
- Temperature range: -200°C up to 450°C
- Standard materials: 304L stainless steel

Options: Call for price and availability

- Metric tapped bolt holes
- Alternative materials: 316L stainless steel, aluminum, etc.

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CF 675 Flanges

CF 675 - Fixed Flanges



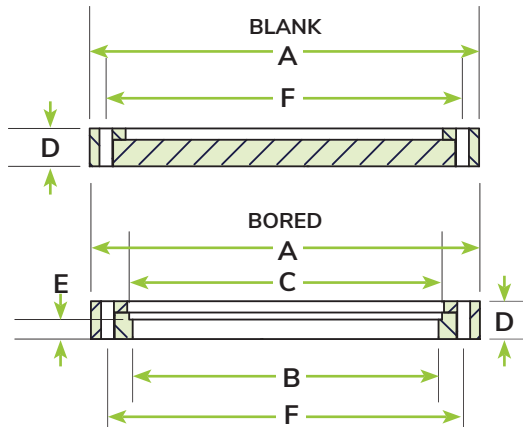
Clearance Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	DIAMETER	UNIT PRICE
5000136	CF675-000	6.75	-	-	0.84	-	5.97	18	0.332	\$100.00
5000137	CF675-400	6.75	3.88	4.01	0.84	0.46	5.97	18	0.332	\$119.00
5000138	CF675-500	6.75	4.88	5.02	0.84	0.46	5.97	18	0.332	\$100.00

Tapped Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	THREAD	UNIT PRICE
5000139	CF675T-000	6.75	-	-	0.84	-	5.97	18	5/16-24	\$118.00
5000140	CF675T-400	6.75	3.88	4.01	0.84	0.46	5.97	18	5/16-24	\$118.00
5000141	CF675T-500	6.75	4.88	5.02	0.84	0.46	5.97	18	5/16-24	\$118.00

CF 675 - Rotatable Flanges



2

CF 675 Flanges

Clearance Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	DIAMETER	UNIT PRICE
5000142	CF675R-000	6.75	-	-	0.84	-	5.97	18	0.332	\$106.00
5000143	CF675R-400	6.75	3.81	4.01	0.84	0.46	5.97	18	0.332	\$106.00
5000144	CF675R-500	6.75	4.88	5.01	0.84	0.46	5.97	18	0.332	\$106.00

Tapped Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	THREAD	UNIT PRICE
5000145	CF675RT-000	6.75	-	-	0.84	-	5.97	18	5/16-24	\$205.00
5000146	CF675RT-400	6.75	3.81	4.01	0.84	0.46	5.97	18	5/16-24	CALL
5000147	CF675RT-500	6.75	4.88	5.01	0.84	0.46	5.97	18	5/16-24	\$180.00

CF 675 Flange Hardware

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
0604035	CF675-GA-CO	(10) Copper Gaskets	\$60.00
0604007	CF675-GA-VT	(1) Viton® Gasket	\$18.00
0605153	CF675-HBK	(25) Bolt, Nut & Washer Kit; 5/16-24x2 1/4 in.	\$27.00
0605155	CF675-12BK	(25) 12-point Bolt, Nut & Washer Kit; 5/16-24x2 1/4 in.	\$38.00
0605154	CF675-HTBK	(25) Bolt & Washer Kit; 5/16-24x1 1/2	\$11.00
0605196	CF675-12BK-SP	(25) Silver Plated 12-point Bolt, Nut & Washer Kit; 5/16-24x2 1/4 in.	\$52.00
0605156	CF675-12TBK	(25) 12-point Bolt & Washer Kit; 5/16-24x1 1/4 in.	\$28.00
0605195	CF675-12TBK-SP	(25) Silver Plated 12-point Bolt & Washer Kit; 5/16-24x1 1/4 in.	\$38.00
0605113	12-POINT WRENCH	(1) Fits CF 12-point bolts	\$27.00
0605208	ASTL	(1) Bolt thread lubricant eliminates galling of bolt and nut or tapped bolt hole	\$12.50

CF 800 - 8 inches O.D. UHV Flanges



Product Features:

- Designed to fit standard inch tubing O.D.'s
- Self-aligning
- Internal weld
- Sexless flanges
- Rotatable flanges for easier bolt hole alignment
- Tapped and clearance bolt holes available
- Blank flanges to close unused ports or custom modify
- Interchangeable with other ConFlat® style flanges
- Adapters to other flange systems available

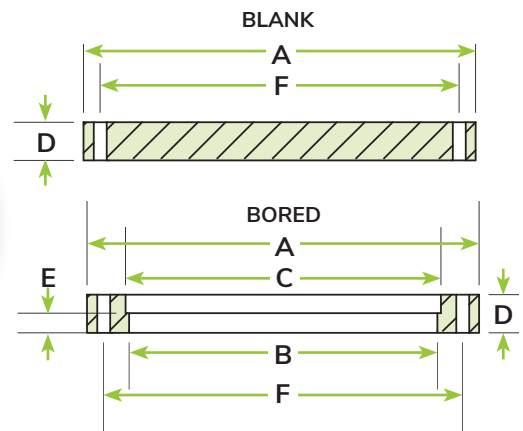
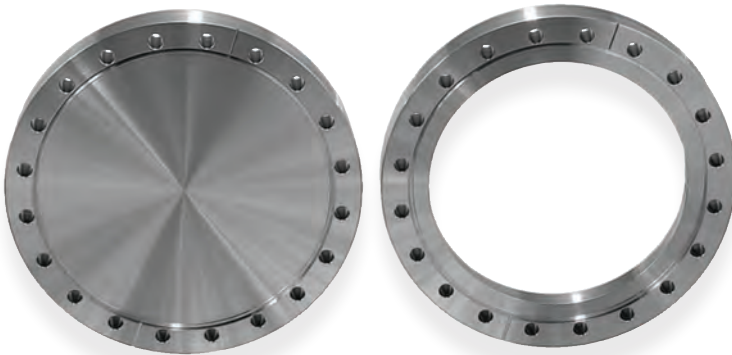
Product Specifications:

- Pressure range: UHV (approx. 1×10^{-13} Torr)
- Temperature range: -200°C up to 450°C
- Standard materials: 304L stainless steel

Options: Call for price and availability

- Metric tapped bolt holes
- Alternative materials: 316L stainless steel, aluminum, etc.

CF 800 - Fixed Flanges



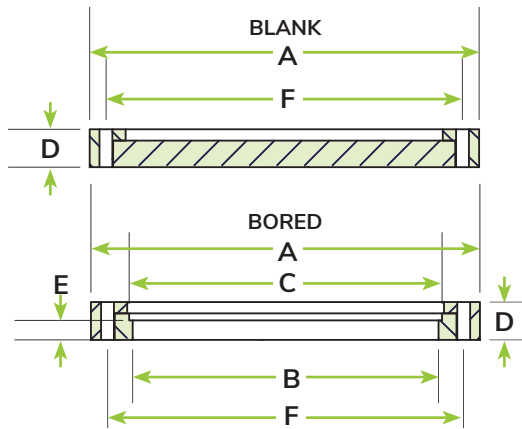
Clearance Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	DIAMETER	UNIT PRICE
5000148	CF800-000	7.97	-	-	0.88	-	7.13	20	0.332	\$129.00
5000149	CF800-600	7.97	5.84	6.02	0.88	0.50	7.13	20	0.332	\$129.00

Tapped Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	THREAD	UNIT PRICE
5000150	CF800T-000	7.97	-	-	0.88	-	7.13	20	5/16-24	\$164.00
5000151	CF800T-600	7.97	5.84	6.02	0.88	0.50	7.13	20	5/16-24	\$164.00

CF 800 - Rotatable Flanges



2

CF 800 Flanges

Clearance Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	DIAMETER	UNIT PRICE
5000152	CF800R-000	7.97	-	-	0.94	-	7.13	20	0.332	\$160.00
5000153	CF800R-600	7.97	6.13	6.75	0.94	0.50	7.13	20	0.332	\$160.00

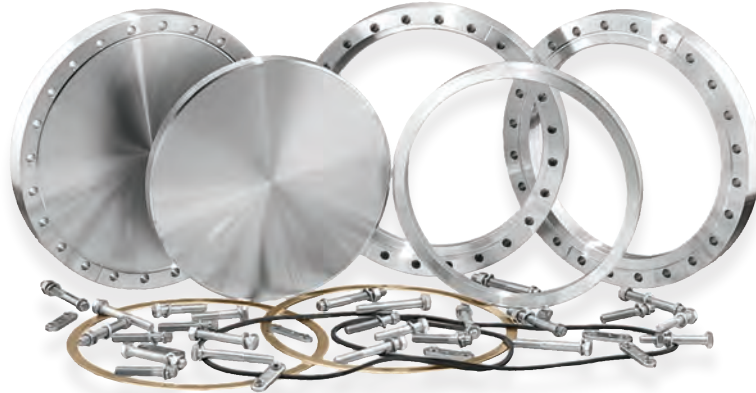
Tapped Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	THREAD	UNIT PRICE
5000154	CF800RT-000	7.97	-	-	0.94	-	7.13	20	5/16-24	\$194.00
5000155	CF800RT-600	7.97	6.13	6.75	0.94	0.50	7.13	20	5/16-24	\$194.00

CF 800 Flange Hardware

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
0604037	CF800-GA-CO	(10) Copper Gaskets	\$70.00
0604008	CF800-GA-VT	(1) Viton® Gasket	\$25.00
0605157	CF800-HBK	(25) Bolt, Nut & Washer Kit; 5/16-24x2 1/4 in.	\$27.00
0605158	CF800-HTBK	(25) Bolt & Washer Kit; 5/16-24x1 3/4 in.	\$20.00
0605159	CF800-12BK	(25) 12-point Bolt, Nut & Washer Kit; 5/16-24x2 1/4 in.	\$38.00
0605198	CF800-12BK-SP	(25) Silver Plated 12-point Bolt, Nut & Washer Kit; 5/16-24x2 1/4 in.	\$52.00
0605160	CF800-12TBK	(25) 12-point Bolt & Washer Kit; 5/16-24x1 3/4 in.	\$32.00
0605197	CF800-12TBK-SP	(25) Silver Plated 12-point Bolt & Washer Kit; 5/16-24x1 3/4 in.	\$45.00
0605161	CF800-HPBK	(20) Plate Nuts, (40) Bolts & Washers; 5/16-24x2 1/4 in.	\$92.00
0605162	CF800-PN	(24) Plate Nuts; 5/16-24	49.00
0605163	CF800-12PBK	(20) Plate Nuts, (40) 12-point Bolts & Washers; 5/16-24x2 1/4 in.	\$130.00
0605270	CF800-12PBK-SP	(20) Plate Nuts, (40) Silver Plated 12-point Bolts & Washers; 5/16-24x2 1/4 in.	\$135.00
0605113	12-POINT WRENCH	(1) Fits CF 12-point bolts	\$27.00
0605208	ASTL	(1) Bolt thread lubricant eliminates galling of bolt and nut or tapped bolt hole	\$12.50

CF 1000 - 10 inches O.D. UHV Flanges



Product Features:

- Designed to fit standard inch tubing O.D.'s
- Self-aligning
- Internal weld
- Sexless flanges
- Rotatable flanges for easier bolt hole alignment
- Tapped and clearance bolt holes available
- Blank flanges to close unused ports or custom modify
- Interchangeable with other ConFlat® style flanges
- Adapters to other flange systems available

Product Specifications:

- Pressure range: UHV (approx. 1×10^{-13} Torr)
- Temperature range: -200°C up to 450°C
- Standard materials: 304L stainless steel

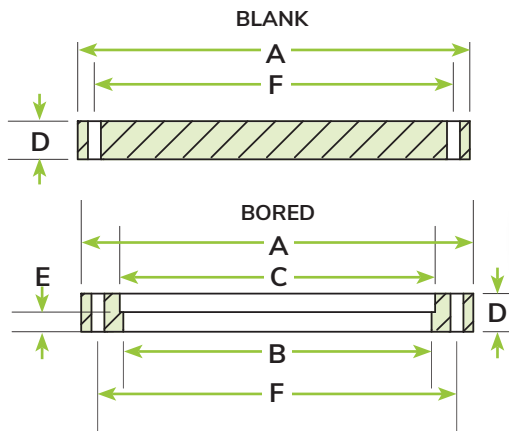
Options: Call for price and availability

- Metric tapped bolt holes
- Alternative materials: 316L stainless steel, aluminum, etc.

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CF 1000 Flanges

CF 1000 - Fixed Flanges



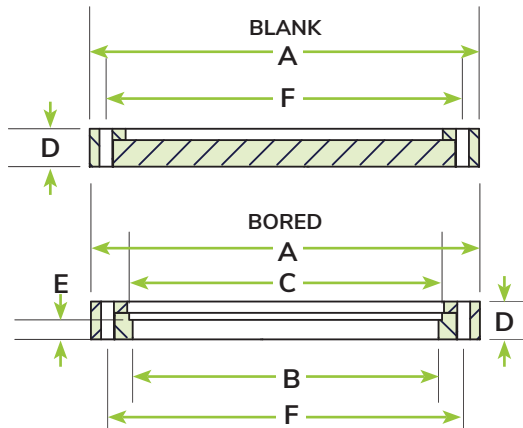
Clearance Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	DIAMETER	UNIT PRICE
5000156	CF1000-000	9.97	-	-	0.97	-	9.13	24	0.332	\$295.00
5000157	CF1000-800	9.97	7.83	8.02	0.97	0.50	9.13	24	0.332	\$295.00

Tapped Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	THREAD	UNIT PRICE
5000158	CF1000T-000	9.97	-	-	0.97	-	9.13	24	5/16-24	\$346.00
5000159	CF1000T-800	9.97	7.83	8.02	0.97	0.50	9.13	24	5/16-24	\$356.00

CF 1000 - Rotatable Flanges



2
CF 1000 Flanges

Clearance Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	DIAMETER	UNIT PRICE
5000160	CF1000R-000	9.97	-	-	0.97	-	9.13	24	0.332	\$434.00
5000161	CF1000R-800	9.97	7.83	8.02	0.97	0.50	9.13	24	0.332	\$361.00

Tapped Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	THREAD	UNIT PRICE
5000162	CF1000RT-000	9.97	-	-	0.97	-	9.13	24	5/16-24	\$521.00
5000163	CF1000RT-800	9.97	7.83	8.02	0.97	0.50	9.13	24	5/16-24	\$521.00

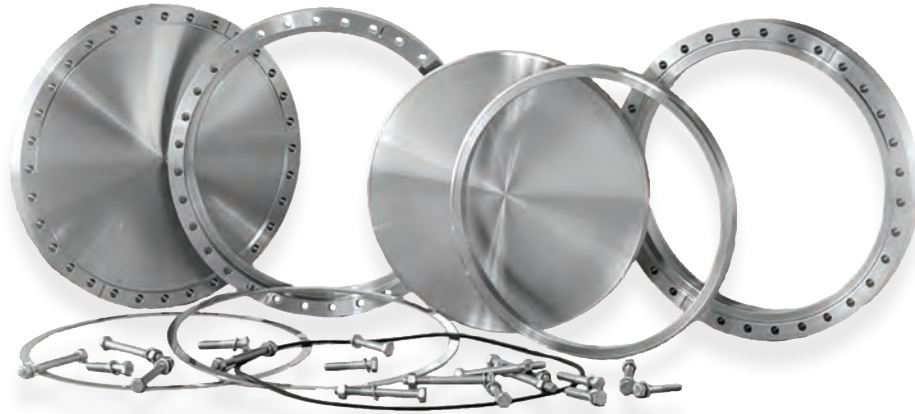
CF 1000 Flange Hardware

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
0604039	CF1000-GA-CO	(10) Copper Gaskets	\$85.00
0604009	CF1000-GA-VT	(1) Viton® Gasket	\$31.00
0605164	CF1000-HBK	(25) Bolt, Nut & Washer Kit; 5/16-24x2 1/2 in.	\$28.00
0605165	CF1000-HTBK	(25) Bolt & Washer Kit; 5/16-24x1 3/4 in.	\$20.00
0605166	CF1000-12BK	(25) 12-point Bolt, Nut & Washer Kit; 5/16-24x2 1/2 in.	\$40.00
0605200	CF1000-12BK-SP	(25) Silver Plated 12-point Bolt, Nut & Washer Kit; 5/16-24x2 1/2 in.	\$54.00
0605167	CF1000-12TBK	(25) 12-point Bolt & Washer Kit; 5/16-24x1 3/4 in.	\$32.00
0605199	CF1000-12TBK-SP	(25) Silver Plated 12-point Bolt & Washer Kit; 5/16-24x1 3/4 in.	\$45.00
0605168	CF1000-HPBK	(24) Plate Nuts, (48) Bolts & Washers; 5/16-24x2 1/2 in.	\$100.00
0605169	CF1000-PN	(24) Plate Nuts; 5/16-24	\$50.00
0605170	CF1000-12PBK	(24) Plate Nuts, (48) 12-point Bolts & Washers; 5/16-24x2 1/2 in.	\$130.00
0605310	CF1000-12PBK-SP	(24) Plate Nuts, (48) Silver Plated 12-point Bolts & Washers; 5/16-24x2 1/2 in.	\$165.00
0605113	12-POINT WRENCH	(1) Fits CF 12-point bolts	\$27.00
0605208	ASTL	(1) Bolt thread lubricant eliminates galling of bolt and nut or tapped bolt hole	\$12.50

CF 1200 - 12 inches O.D. UHV Flanges

2

CF 1200 Flanges



Product Features:

- Designed to fit standard inch tubing O.D.'s
- Self-aligning
- Internal weld
- Sexless flanges
- Rotatable flanges for easier bolt hole alignment
- Tapped and clearance bolt holes available
- Blank flanges to close unused ports or custom modify
- Interchangeable with other ConFlat® style flanges
- Adapters to other flange systems available

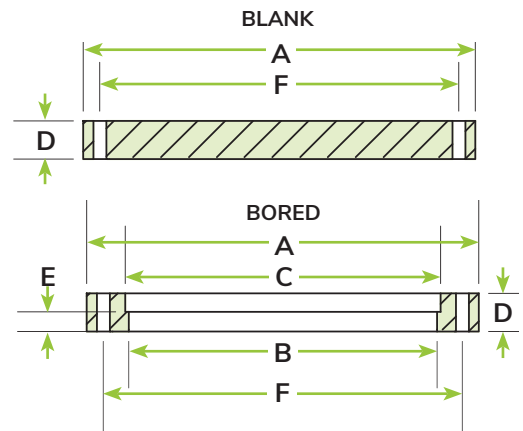
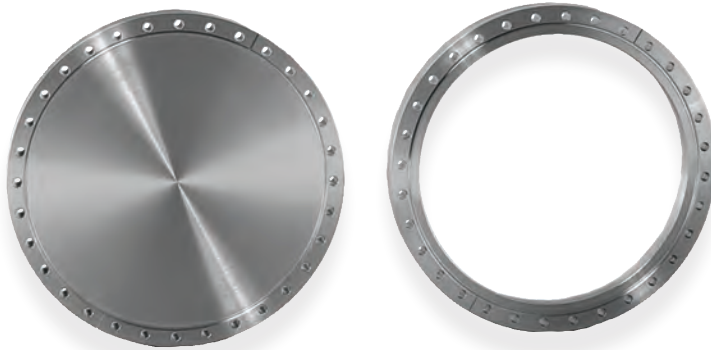
Product Specifications:

- Pressure range: UHV (approx. 1×10^{-13} Torr)
- Temperature range: -200°C up to 450°C
- Standard materials: 304L stainless steel

Options: Call for price and availability

- Metric tapped bolt holes
- Alternative materials: 316L stainless steel, aluminum, etc.

CF 1200 - Fixed Flanges



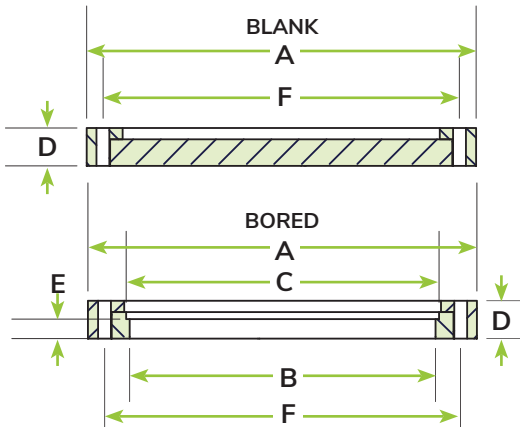
Clearance Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	DIAMETER	UNIT PRICE
5000164	CF1200-000	11.97	-	-	1.02	-	11.18	32	0.332	\$545.00
5000165	CF1200-1000	11.97	9.88	10.03	1.02	0.50	11.18	32	0.332	\$565.00

Tapped Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	THREAD	UNIT PRICE
5000166	CF1200T-000	11.97	-	-	1.02	-	11.18	32	5/16-24	\$595.00
5000167	CF1200T-1000	11.97	9.88	10.03	1.02	0.500	11.18	32	5/16-24	\$595.00

CF 1200 - Rotatable Flanges



2
CF 1200 Flanges

Clearance Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	DIAMETER	UNIT PRICE
5000168	CF1200R-000	11.97	-	-	1.02	-	11.18	32	0.332	\$650.00
5000169	CF1200R-1000	11.97	9.88	10.03	1.02	0.50	11.18	32	0.332	\$650.00

Tapped Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	THREAD	UNIT PRICE
5000170	CF1200RT-000	11.97	-	-	1.02	-	11.18	32	5/16-24	\$655.00
5000171	CF1200RT-1000	11.97	9.88	10.03	1.02	0.50	11.18	32	5/16-24	\$655.00

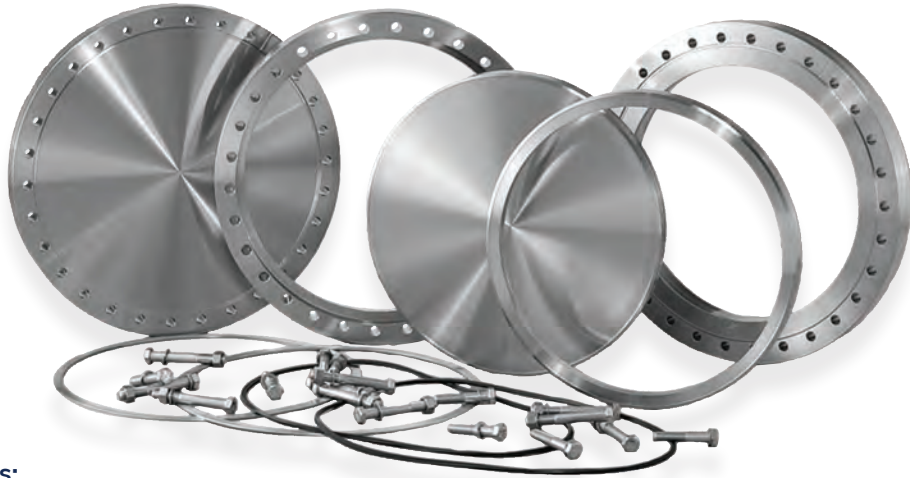
CF 1200 Flange Hardware

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
0604041	CF1200-GA-CO	(1) Copper Gaskets	\$55.00
0604010	CF1200-GA-VT	(1) Viton® Gasket	\$50.00
0605171	CF1200-HBK	(32) Bolt, Nut & Washer Kit; 5/16-24x3 in.	\$40.00
0605172	CF1200-HTBK	(32) Bolt & Washer Kit; 5/16-24x1 3/4 in.	\$35.00
0605312	CF1200-12BK	(32) 12-point Bolt & Washer Kit; 5/16-24x1 3/4 in.	\$35.00
0605202	CF1200-12BK-SP	(32) Silver Plated 12-point Bolt & Washer Kit; 5/16-24x1 3/4 in.	\$55.00
0605208	ASTL	(1) Bolt thread lubricant eliminates galling of bolt and nut or tapped bolt hole	\$12.50

CF 1325 - 13.25 inches O.D. UHV Flanges

2

CF 1325 Flanges



Product Features:

- Designed to fit standard inch tubing O.D.'s
- Self-aligning
- Internal weld
- Sexless flanges
- Rotatable flanges for easier bolt hole alignment
- Tapped and clearance bolt holes available
- Blank flanges to close unused ports or custom modify
- Interchangeable with other ConFlat® style flanges
- Adapters to other flange systems available

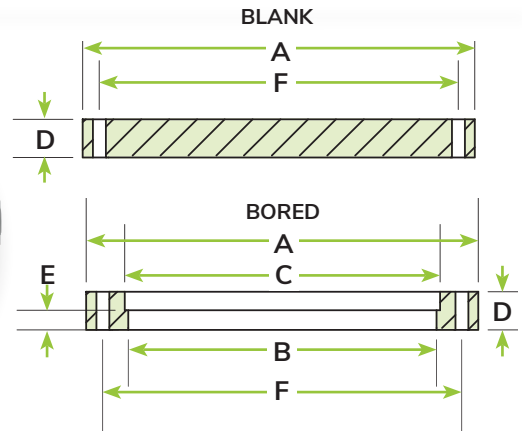
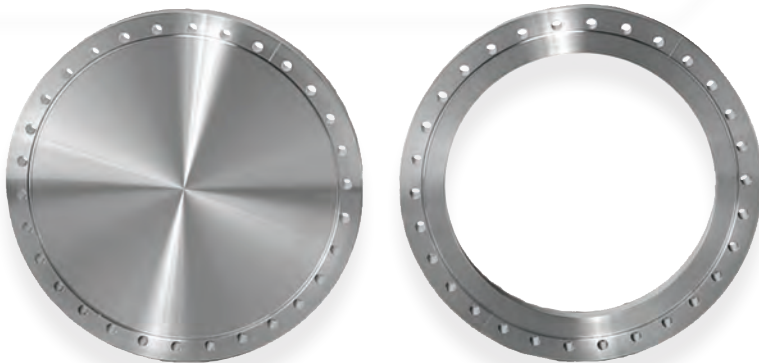
Product Specifications:

- Pressure range: UHV (approx. 1×10^{-13} Torr)
- Temperature range: -200°C up to 450°C
- Standard materials: 304L stainless steel

Options: Call for price and availability

- Metric tapped bolt holes
- Alternative materials: 316L stainless steel, aluminum, etc.

CF 1325 - Fixed Flanges



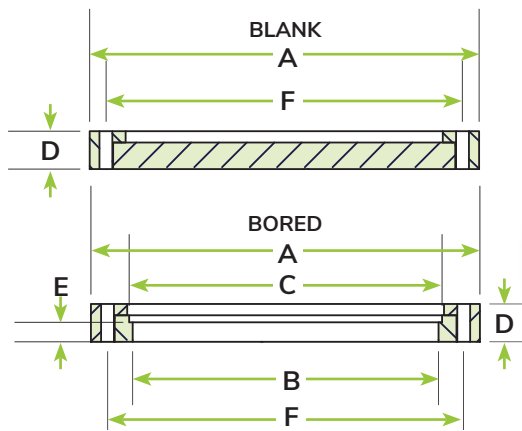
Clearance Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	DIAMETER	UNIT PRICE
5000172	CF1325-000	13.25	-	-	1.12	-	12.06	30	0.390	\$630.00
5000173	CF1325-1000	13.25	9.75	10.02	1.12	0.50	12.06	30	0.390	\$635.00
5000174	CF1325-1075	13.25	10.50	10.78	1.12	0.50	12.06	30	0.390	\$635.00

Tapped Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	THREAD	UNIT PRICE
5000175	CF1325T-000	13.25	-	-	1.12	-	12.06	30	3/8-24	\$655.00
5000176	CF1325T-1000	13.25	9.75	10.02	1.12	0.50	12.06	30	3/8-24	\$655.00
5000177	CF1325T-1075	13.25	10.50	10.78	1.12	0.50	12.06	30	3/8-24	\$655.00

CF 1325 - Rotatable Flanges



2
CF 1325 Flanges

Clearance Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	DIAMETER	UNIT PRICE
5000178	CF1325R-000	13.25	-	-	1.12	-	12.06	30	0.390	\$655.00
5000179	CF1325R-1000	13.25	9.75	10.03	1.12	0.50	12.06	30	0.390	\$655.00
5000180	CF1325R-1075	13.25	10.50	10.77	1.12	0.50	12.06	30	0.390	\$655.00

Tapped Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	THREAD	UNIT PRICE
5000181	CF1325RT-000	13.25	-	-	1.12	-	12.06	30	3/8-24	\$655.00
5000182	CF1325RT-1000	13.25	9.75	10.03	1.12	0.50	12.06	30	3/8-24	\$655.00
5000183	CF1325RT-1075	13.25	10.50	10.77	1.12	0.50	12.06	30	3/8-24	\$655.00

CF 1325 Flange Hardware

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
0604043	CF1325-GA-CO	(1) Copper Gaskets	\$50.00
0604011	CF1325-GA-VT	(1) Viton® Gasket	CALL
0605173	CF1325-HBK	(30) Bolt, Nut & Washer Kit; 3/8-24x3 in.	\$40.00
0605174	CF1325-HTBK	(30) Bolt & Washer Kit; 3/8-24x2 in.	\$35.00
0605204	CF1325-HBK-SP	(30) Silver Plated Bolt, Nut & Washer Kit; 3/8-24x3 in.	\$65.00
0605203	CF1325-HTBK-SP	(30) Silver Plated Bolt & Washer Kit; 3/8-24x2 in.	\$60.00
0605208	ASTL	(1) Bolt thread lubricant eliminates galling of bolt and nut or tapped bolt hole	\$12.50

CF 1400 - 14 inches O.D. UHV Flanges



Product Features:

- Designed to fit standard inch tubing O.D.'s
- Self-aligning
- Internal weld
- Sexless flanges
- Rotatable flanges for easier bolt hole alignment
- Tapped and clearance bolt holes available
- Blank flanges to close unused ports or custom modify
- Interchangeable with other ConFlat® style flanges
- Adapters to other flange systems available

Product Specifications:

- Pressure range: UHV (approx. 1×10^{-13} Torr)
- Temperature range: -200°C up to 450°C
- Standard materials: 304L stainless steel

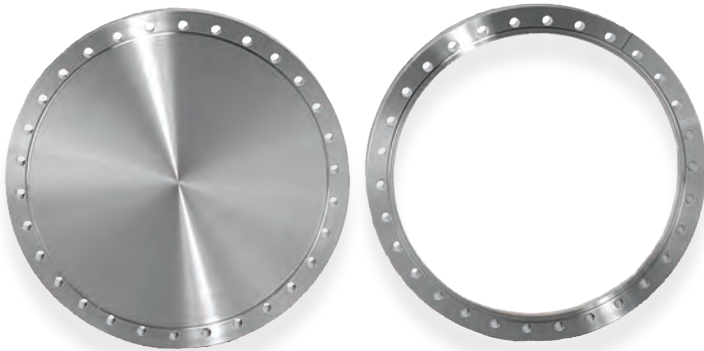
Options: Call for price and availability

- Metric tapped bolt holes
- Alternative materials: 316L stainless steel, aluminum, etc.

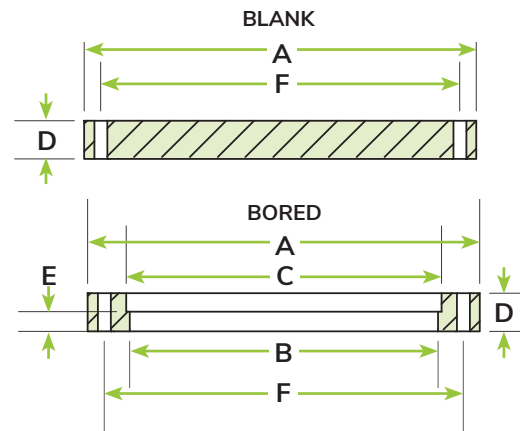
2

CF 1400 Flanges

CF 1400 - Fixed Flanges



Clearance Bolt Holes

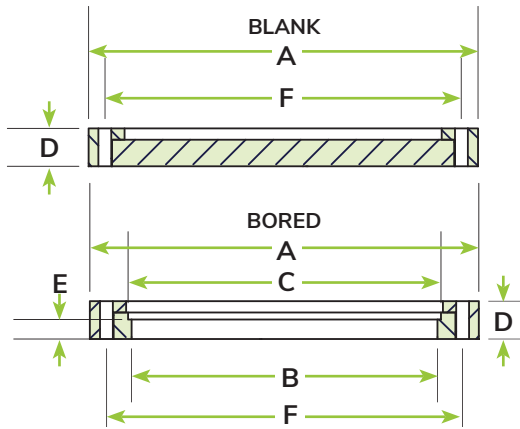


PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	DIAMETER	UNIT PRICE
5000184	CF1400-000	14.00	-	-	1.12	-	12.81	30	0.390	\$755.00
5000185	CF1400-1200	14.00	11.75	12.03	1.12	0.50	12.81	30	0.390	\$755.00

Tapped Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	THREAD	UNIT PRICE
5000186	CF1400T-000	14.00	-	-	1.120	-	12.81	30	3/8-24	\$830.00
5000187	CF1400T-1200	14.00	11.75	12.03	1.120	0.50	12.81	30	3/8-24	\$830.00

CF 1400 - Rotatable Flanges



2
CF 1400 Flanges

Clearance Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	DIAMETER	UNIT PRICE
5000188	CF1400R-000	14.00	-	-	1.12	-	12.81	30	0.390	\$870.00
5000189	CF1400R-1200	14.00	11.75	12.03	1.12	0.50	12.81	30	0.390	\$870.00

Tapped Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	THREAD	UNIT PRICE
5000190	CF1400RT-000	14.00	-	-	1.12	-	12.81	30	3/8-24	\$930.00
5000191	CF1400RT-1200	14.00	11.75	12.03	1.12	0.50	12.81	30	3/8-24	\$930.00

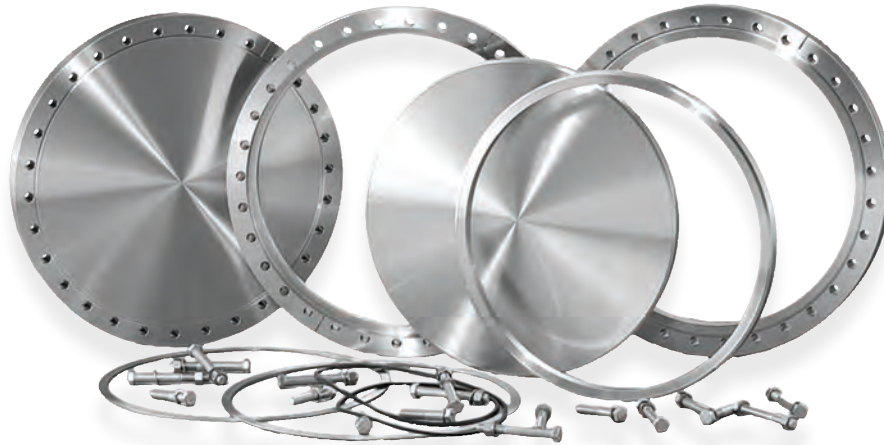
CF 1400 Flange Hardware

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
0604045	CF1400-GA-CO	(1) Copper Gaskets	\$57.00
0604012	CF1400-GA-VT	(1) Viton® Gasket	CALL
0605175	CF1400-HBK	(30) Bolt, Nut & Washer Kit; 3/8-24x3 in.	\$40.00
0605176	CF1400-HTBK	(30) Bolt & Washer Kit; 3/8-24x2 in.	\$35.00
0605206	CF1400-HBK-SP	(30) Silver Plated Bolt, Nut & Washer Kit; 3/8-24x3 in.	\$65.00
0605205	CF1400-HTBK-SP	(30) Silver Plated Bolt & Washer Kit; 3/8-24x2 in.	\$57.00
0605208	ASTL	(1) Bolt thread lubricant eliminates galling of bolt and nut or tapped bolt hole	\$12.50

CF 1450 - 14.5 inches O.D. UHV Flanges

2

CF 1450 Flanges



Product Features:

- Designed to fit standard inch tubing O.D.'s
- Self-aligning
- Internal weld
- Sexless flanges
- Rotatable flanges for easier bolt hole alignment
- Tapped and clearance bolt holes available
- Blank flanges to close unused ports or custom modify
- Interchangeable with other ConFlat® style flanges
- Adapters to other flange systems available

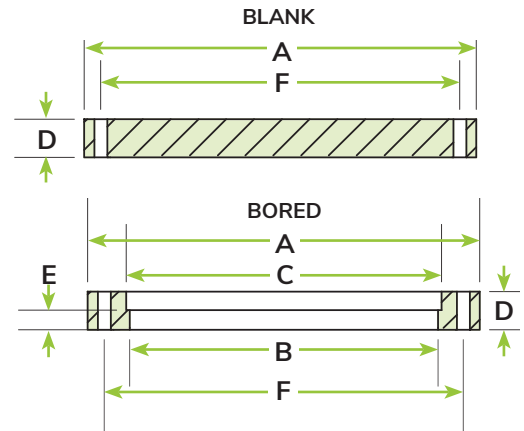
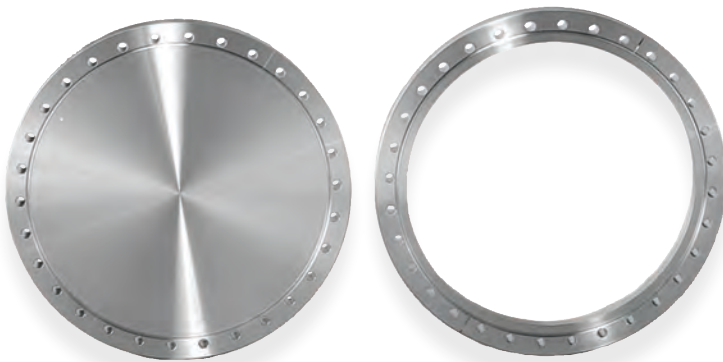
Product Specifications:

- Pressure range: UHV (approx. 1×10^{-13} Torr)
- Temperature range: -200°C up to 450°C
- Standard materials: 304L stainless steel

Options: Call for price and availability

- Metric tapped bolt holes
- Alternative materials: 316L stainless steel, aluminum, etc.

CF 1450 - Fixed Flanges



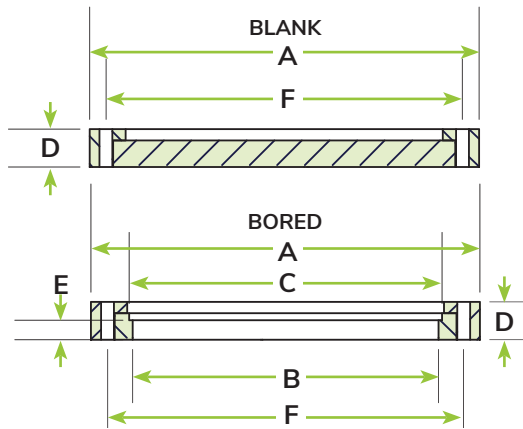
Clearance Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	DIAMETER	UNIT PRICE
5000192	CF1450-000	14.50	-	-	1.12	-	13.31	32	0.390	\$800.00
5000193	CF1450-1200	14.50	11.75	12.03	1.12	0.50	13.31	32	0.390	\$800.00

Tapped Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	THREAD	UNIT PRICE
5000194	CF1450T-000	14.50	-	-	1.12	-	13.31	32	3/8-24	\$900.00
5000195	CF1450T-1200	14.50	11.75	12.03	1.12	0.50	13.31	32	3/8-24	\$900.00

CF 1450 - Rotatable Flanges



2

CF 1450 Flanges

Clearance Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	DIAMETER	UNIT PRICE
5000196	CF1450R-000	14.50	-	-	1.12	-	13.31	32	0.390	\$1,350.00
5000197	CF1450R-1200	14.50	11.75	12.03	1.12	0.50	13.31	32	0.390	\$1,350.00

Tapped Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	THREAD	UNIT PRICE
5000198	1450-000-R-T	14.50	-	-	1.12	-	13.31	32	3/8-24	\$1,450.00
5000199	1450-1200-R-T	14.50	11.75	12.03	1.12	0.50	13.31	32	3/8-24	\$1,450.00

CF 1450 Flange Hardware

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
0604047	CF1450-GA-CO	(1) Copper Gaskets	\$57.00
0604013	CF1450-GA-VT	(1) Viton® Gasket	\$50.00
0605177	CF1450-HBK	(32) Bolt, Nut & Washer Kit; 3/8-24x3 in.	\$48.00
0605178	CF1450-HTBK	(32) Bolt & Washer Kit; 3/8-24x2 in.	\$45.00
0605303	1450-BK-S	(32) Silver Plated Bolt, Nut & Washer Kit; 3/8-24x3 in.	\$65.00
0605311	CF1450-HTBK-SP	(32) Silver Plated Bolt & Washer Kit; 3/8-24x2 in.	\$57.00
0605208	ASTL	(1) Bolt thread lubricant eliminates galling of bolt and nut or tapped bolt hole	\$12.50

CF 1650 - 16.5 inches O.D. UHV Flanges



2

CF 1650 Flanges

Product Features:

- Designed to fit standard inch tubing O.D.'s
- Self-aligning
- Internal weld
- Sexless flanges
- Rotatable flanges for easier bolt hole alignment
- Tapped and clearance bolt holes available
- Blank flanges to close unused ports or custom modify
- Interchangeable with other ConFlat® style flanges
- Adapters to other flange systems available

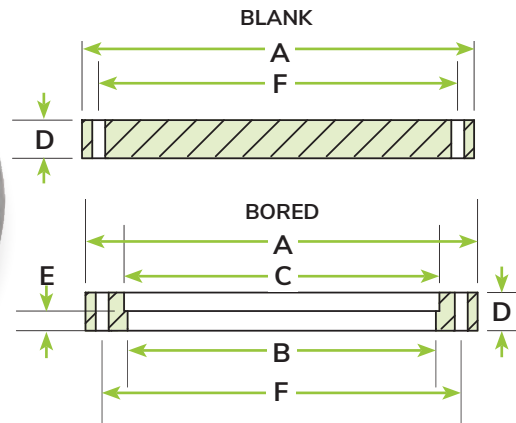
Product Specifications:

- Pressure range: UHV (approx. 1×10^{-13} Torr)
- Temperature range: -200°C up to 450°C
- Standard materials: 304L stainless steel

Options: Call for price and availability

- Metric tapped bolt holes
- Alternative materials: 316L stainless steel, aluminum, etc.

CF 1650 - Fixed Flanges



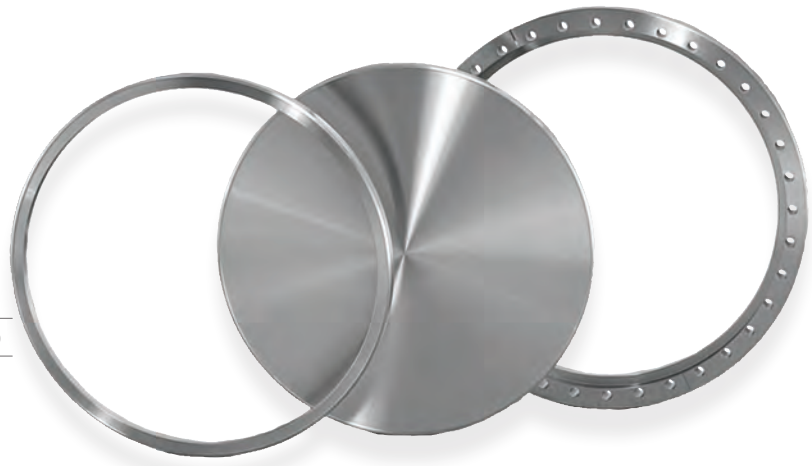
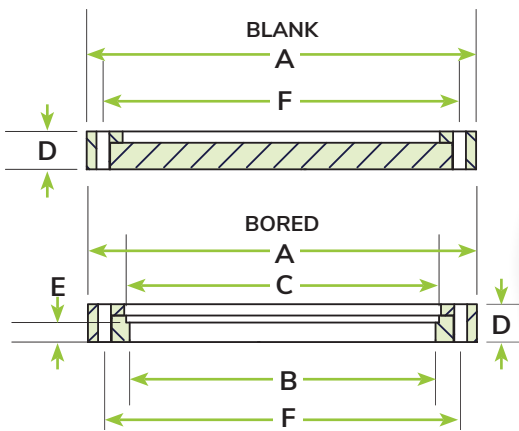
Clearance Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	DIAMETER	UNIT PRICE
5000200	CF1650-000	16.50	-	-	1.12	-	15.31	36	0.390	\$1,270.00
5000201	CF1650-1400	16.50	13.75	14.03	1.12	0.50	15.31	36	0.390	\$1,340.00

Tapped Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	THREAD	UNIT PRICE
5000202	CF1650T-000	16.50	-	-	1.12	-	15.31	36	0.38-24	\$1,350.00
5000203	CF1650T-1400	16.50	13.75	14.03	1.12	0.50	15.31	36	0.38-24	\$1,370.00

CF 1650 - Rotatable Flanges



2

CF 1650 Flanges

Clearance Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	DIAMETER	UNIT PRICE
5000204	CF1650R-000	16.50	-	-	1.12	-	15.31	36	0.390	\$1,330.00
5000205	CF1650R-1400	16.50	13.75	14.03	1.12	0.50	15.31	36	0.390	\$1,330.00

Tapped Bolt Holes

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	THREAD	UNIT PRICE
5000206	CF1650RT-000	16.50	-	-	1.12	-	15.31	36	0.38-24	\$2,145.00
5000207	CF1650RT-1400	16.50	13.75	14.03	1.12	0.50	15.31	36	0.38-24	\$2,145.00

CF 1650 Flange Hardware

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
0604049	CF1650-GA-CO	(1) Copper Gaskets	\$57.00
0604014	CF1650-GA-VT	(1) Viton® Gasket	\$50.00
0605179	CF1650-HBK	(36) Bolt, Nut & Washer Kit; 3/8-24x3 in.	\$55.00
0605180	CF1650-HTBK	(36) Bolt & Washer Kit; 3/8-24x2 in.	\$50.00
0605304	CF1650-HBK-SP	(36) Silver Plated Bolt, Nut & Washer Kit; 3/8-24x3 in.	\$75.00
0605207	CF1650-HTBK-SP	(36) Silver Plated Bolt & Washer Kit; 3/8-24x2 in.	\$70.00
0605208	ASTL	(1) Bolt thread lubricant eliminates galling of bolt and nut or tapped bolt hole	\$12.50

Wire Seal Flanges

Product Features:

- Designed to fit standard inch tubing O.D.'S
- Self aligning
- Internal weld
- Blank flanges to close unused ports or custom modify
- Standard blank flanges are machined from solid stainless steel plate for highest sealing reliability
- Dish head blank flanges have a stainless steel disk welded onto the back of a bored flange. This option weighs less and costs less. Dish head blank flanges have a “-d” suffix on the REFERENCE ID

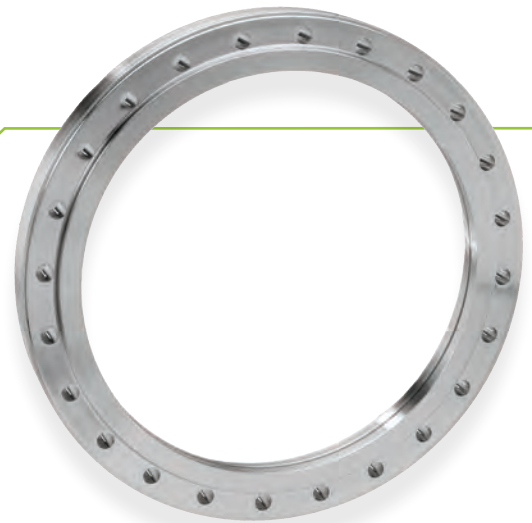
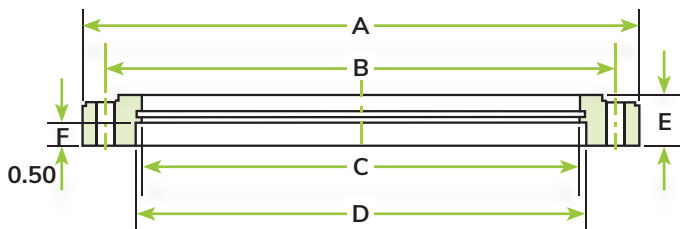
Product Specifications:

- Sizes: outer diameter 12 3/8 inches up to 27 1/8 inches (for tubing diameter 10 inches up to 24 inches)
- Pressure range: UHV (approx. 1×10^{-13} Torr)
- Temperature range: -200°C up to 450°C
- Standard materials: 304L stainless steel. Others available on request



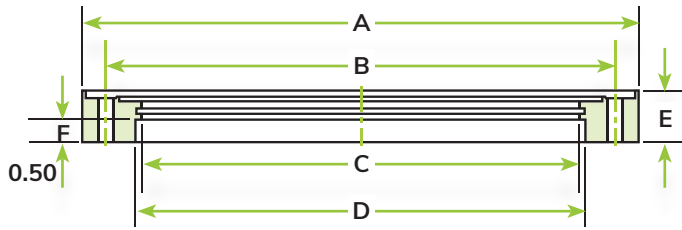
ORDERING NOTE Wire seal flange bolt fasteners can be found on page 15. Wire seal gaskets can be found on page 21.

Wire Seal, Bored, Male Flanges



PART #	REFERENCE ID	FLANGE O.D. (in)	TUBE O.D. (in)	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	UNIT PRICE
5500004	WF1200M-1000	12.38	10.00	12.38	11.34	9.75	10.00	1.13	0.50	24	CALL
5500010	WF1400M-1200	14.63	12.00	14.63	13.59	11.75	12.00	1.13	0.50	32	CALL
5500016	WF1700M-1400	17.25	14.00	17.25	15.72	13.75	14.00	1.13	0.50	36	CALL
5500036	WF1900M-1600	19.56	16.00	19.56	17.88	15.75	16.00	1.31	0.50	36	CALL
5500028	WF2200M-1800	22.13	18.00	22.13	20.19	17.75	18.00	1.50	0.50	36	CALL
5500034	WF2700M-2400	27.13	24.00	27.13	25.84	23.75	24.00	1.75	0.63	40	CALL

Wire Seal, Bored, Female Flanges



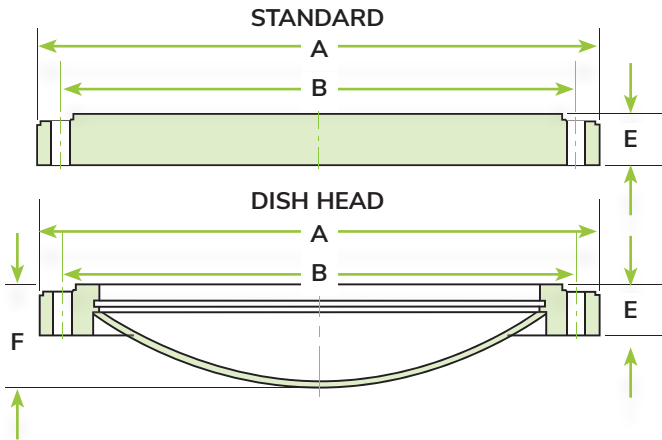
2 Wire Seal Flanges

PART #	REFERENCE ID	FLANGE O.D. (in)	TUBE O.D. (in)	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	BOLT HOLES	UNIT PRICE
5500005	WF1200F-1000	12.38	10.00	12.38	11.34	9.75	10.00	1.13	0.50	24	CALL
5500011	WF1400F-1200	14.63	12.00	14.63	13.59	11.75	12.00	1.13	0.50	32	CALL
5500017	WF1700F-1400	17.25	14.00	17.25	15.72	13.75	14.00	1.13	0.50	36	CALL
5500023	WF1900F-1600	19.56	16.00	19.56	17.88	15.75	16.00	1.31	0.50	36	CALL
5500029	WF2200F-1800	22.13	18.00	22.13	20.19	17.75	18.00	1.50	0.50	36	CALL
5500035	WF2700F-2400	27.13	24.00	27.13	25.84	23.75	24.00	1.75	0.63	40	CALL

Wire Seal Flange Hardware

PART #	REFERENCE ID	USE WITH FLANGE	DESCRIPTION	UNIT PRICE
607000	WF1200-HBK	WF1200-BK	(24) Bolt, Nut and Washer Kit, 3/8-24x2 1/2 in.	\$37.00
607001	WF1400-HBK	WF1400-BK	(32) Bolt, Nut and Washer Kit, 3/8-24x2 3/4 in.	\$70.00
607002	WF1700-HBK	WF1700-BK	(36) Bolt, Nut and Washer Kit, 1/2-20x2 3/4 in.	\$105.00
607003	WF1900-HBK	WF1900-BK	(36) Bolt, Nut and Washer Kit, 1/2-20x3 in.	\$110.00
607004	WF2200-HBK	WF2200-BK	(36) Bolt, Nut and Washer Kit, 5/8-18x3 1/2 in.	\$230.00
607005	WF2700-HBK	WF2700-BK	(40) Bolt, Nut and Washer Kit, 5/8-18x4 in.	\$260.00

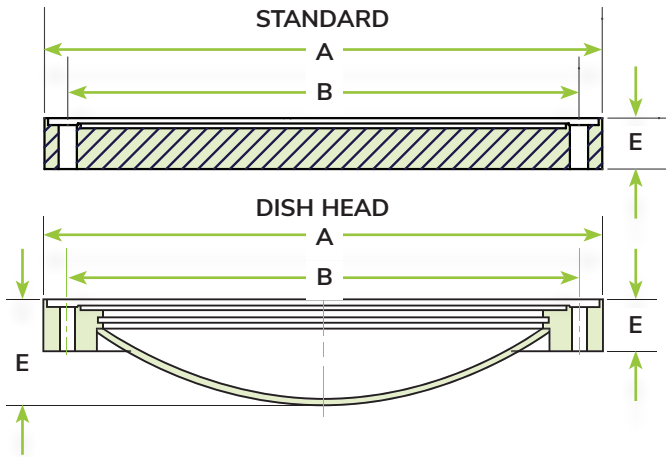
Wire Seal, Blank Male Flanges



ORDERING NOTE: Dish head blank flanges have a metal disk welded onto the back of bored flange. They are designated with a “-D” suffix on the REFERENCE ID.

PART #	REFERENCE ID	TYPE	FLANGE O.D. (in)	TUBE O.D. (in)	A (in)	B (in)	E (in)	F (in)	BOLT HOLES	UNIT PRICE
5500000	WF1200M-000	Standard	12.38	10.00	12.38	11.34	1.13	-	24	CALL
5500001	WF1200MD-000	Dishhead	12.38	10.00	12.38	11.34	1.13	2.70	24	CALL
5500006	WF1400M-000	Standard	14.63	12.00	14.63	13.59	1.13	-	32	CALL
5500007	WF1400MD-000	Dishhead	14.63	12.00	14.63	13.59	1.13	2.70	32	CALL
5500012	WF1700M-000	Standard	17.25	14.00	17.25	15.72	1.13	-	36	CALL
5500013	WF1700MD-000	Dishhead	17.25	14.00	17.25	15.72	1.13	3.10	36	CALL
5500018	WF1900M-000	Standard	19.56	16.00	19.56	17.88	1.31	-	36	CALL
5500019	WF1900MD-000	Dishhead	19.56	16.00	19.56	17.88	1.31	3.04	36	CALL
5500024	WF2200M-000	Standard	22.13	18.00	22.13	20.19	1.50	-	36	CALL
5500025	WF2200MD-000	Dishhead	22.13	18.00	22.13	20.19	1.50	3.50	36	CALL
5500030	WF2700M-000	Standard	27.13	24.00	27.13	25.84	1.75	-	40	CALL
5500031	WF2700MD-000	Dishhead	27.13	24.00	27.13	25.84	1.75	5.10	40	CALL

Wire Seal, Blank Female Flanges



2 Wire Seal Flanges

ORDERING NOTE Dish head blank flanges have a metal disk welded onto the back of bored flange. They are designated with a “-D” suffix on the REFERENCE ID.

PART #	REFERENCE ID	TYPE	FLANGE O.D. (in)	TUBE O.D. (in)	A (in)	B (in)	E (in)	F (in)	BOLT HOLES	UNIT PRICE
5500002	WF1200F-000	Standard	12.38	10.00	12.38	11.34	1.13	-	24	CALL
5500003	WF1200FD-000	Dishhead	12.38	10.00	12.38	11.34	1.13	2.70	24	CALL
5500008	WF1400F-000	Standard	14.63	12.00	14.63	13.59	1.13	-	32	CALL
5500009	WF1400FD-000	Dishhead	14.63	12.00	14.63	13.59	1.13	2.70	32	CALL
5500014	WF1700F-000	Standard	17.25	14.00	17.25	15.72	1.13	-	36	CALL
5500015	WF1700FD-000	Dishhead	17.25	14.00	17.25	15.72	1.13	3.10	36	CALL
5500020	WF1900F-000	Standard	19.56	16.00	19.56	17.88	1.31	-	36	CALL
5500021	WF1900FD-000	Dishhead	19.56	16.00	19.56	17.88	1.31	3.04	36	CALL
5500026	WF2200F-000	Standard	22.13	18.00	22.13	20.19	1.50	-	36	CALL
5500027	WF2200FD-000	Dishhead	22.13	18.00	22.13	20.19	1.50	3.50	36	CALL
5500032	WF2700F-000	Standard	27.13	24.00	27.13	25.84	1.75	-	40	CALL
5500033	WF2700FD-000	Dishhead	27.13	24.00	27.13	25.84	1.75	5.10	40	CALL

CF Special Purpose Flanges

2 CF Special Purpose Flanges

These flanges can serve a variety of useful functions in your vacuum system. Adapt directly from a larger CF to a smaller flange, from a single or double-sided CF to one or two female NPT side ports, or a double-sided CF with a CF133 machined side port. These flanges are ideal for adding vacuum accessories to your system such as measurement devices, shutters and valves.



Product Specifications:

- Vacuum rated to 1×10^{-13} Torr.
- Leak rating $< 1 \times 10^{-9}$ std. cc/s helium
- Temperature range: -200°C to 450°C
- Standard materials:
 - Flanges and fittings: 304L stainless steel
 - Seals: OFHC copper for ultra high vacuum (UHV) or Viton® for high vacuum (HV)
- Standard sizes:
 - CF flanges outer diameter: 1 1/3 inches to 16 1/2 inches (for tubing diameter 1/4 inches up to 14 inches)

Product Features:

- Reusable flanges
- All-metal seals
- Sexless flanges
- Rotatable flanges for easier bolt hole alignment
- Tapped or clearance bolt holes available
- Adapters to other flange systems available
- Compatible with U.S. Standard (imperial) and metric measurements
- Interchangeable with other ConFlat® style flanges made to industry standards, others available on request

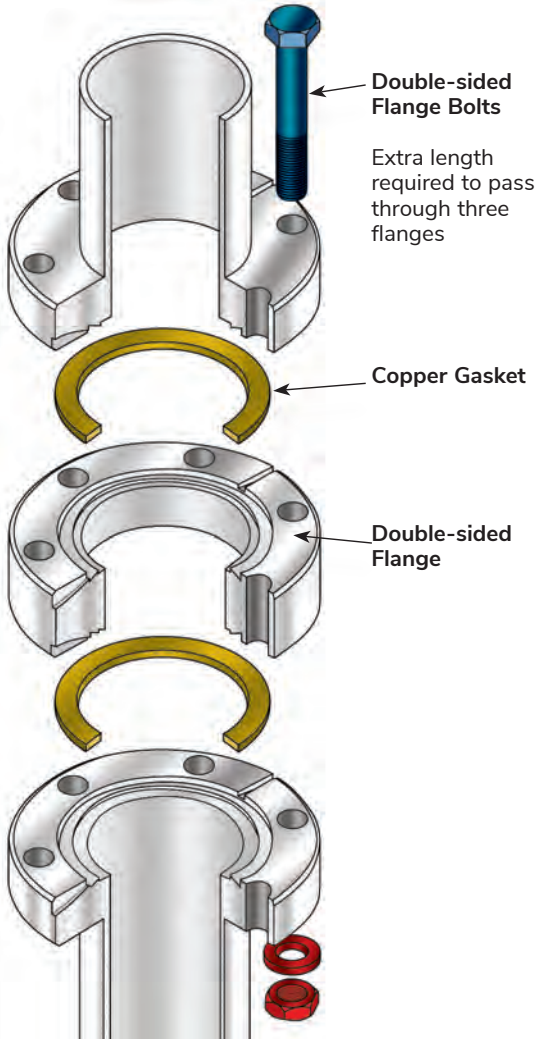
Double-sided CF Flanges

These flanges are manufactured with the same size CF flange on both sides. They are installed between two flanges also of the same size. This is a convenient and efficient way to add a spacer or customize with a radial port to add a variety of vacuum accessories to your system such as measurement devices, shutters and valves.

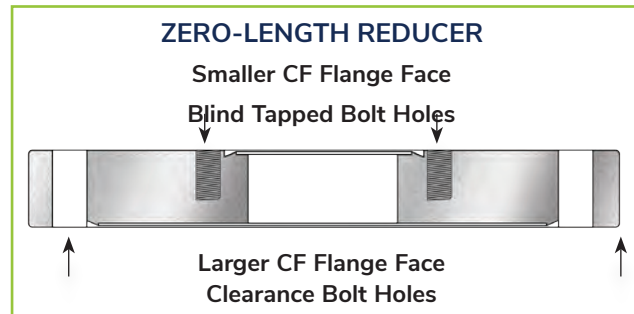
Double-sided CF flanges have special hardware to accommodate the width of three CF flanges for this seal assembly.



Double-sided CF Diagram



Zero-Length Reducer CF Flanges

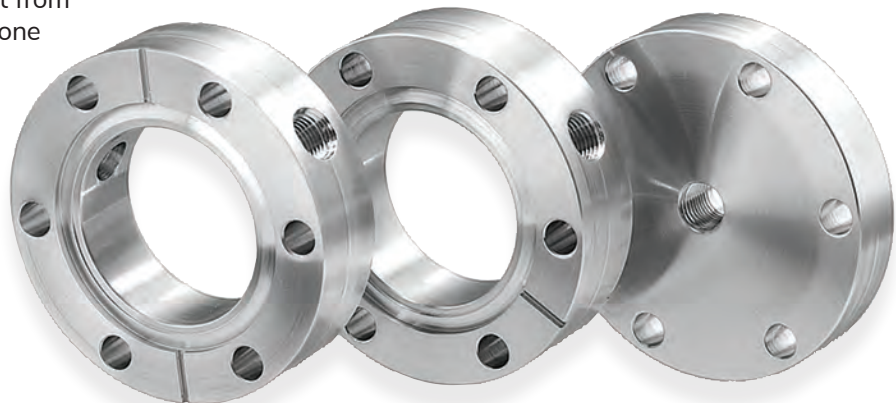


These flanges are manufactured with different size CF flange on either side of the flange. They allow direct assembly of two different sizes of CF flanges with minimal impact on the length added to your system to accomplish the transition. Zero-length reducers are the width of one standard flange.

Adaptive CF Flanges

These flanges are manufactured in a variety of useful designs. Adapt from a single or double-sided CF to one or two female NPT side ports, or a double-sided CF with a CF133 machined side port.

These flanges are ideal for adding vacuum accessories to your system such as measurement devices, shutters and valves.



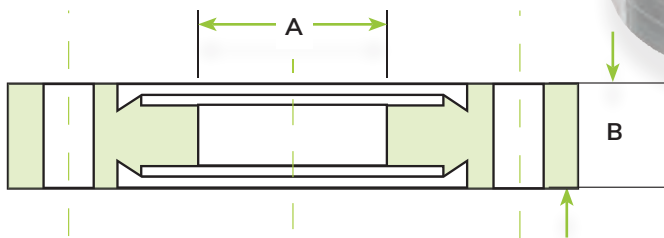
CF Double-Sided Flanges

Product Features:

- Same size CF flange on both sides
- Ideal to add a spacer to your system or customize with a radial port
- Requires special CF double-sided flange bolt kit for fastening
- Use standard CF gaskets to seal
- Self-aligning
- Sexless flanges
- Interchangeable with other ConFlat® style flanges
- Adapters to other flange systems available

Product Specifications:

- Pressure range: UHV (approx. 1×10^{-13} Torr)
- Temperature range: -200°C up to 450°C
- Standard materials: 304L stainless steel



Options: Call for price and availability

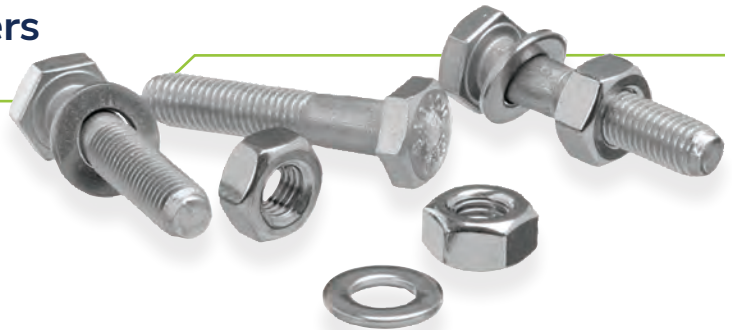
- Tapped bolt holes
- Alternative materials: 316L stainless steel, aluminum, etc.

PART #	REFERENCE ID	FLANGE O.D. (in)	A (in)	B (in)	BOLT HOLES		UNIT PRICE
					#	DIA/THRD	
5000245	CF133-000-DS-0.300	1.33	-	0.30	6	0.17	\$29.00
5000246	CF133-025-DS-0.300	1.33	0.26	0.30	6	0.17	\$29.00
5000247	CF133-038-DS-0.300	1.33	0.38	0.30	6	0.17	\$29.00
5000248	CF133-050-DS-0.300	1.33	0.51	0.30	6	0.17	\$29.00
5000249	CF133-075-DS-0.300	1.33	0.63	0.30	6	0.17	\$29.00
5000250	CF133-000-DS-0.500	1.33	-	0.50	6	0.17	\$29.00
5000251	CF133-075-DS-0.500	1.33	0.63	0.50	6	0.17	\$29.00
5000252	CF212-000-DS-0.470	2.12	-	0.47	4	0.27	\$29.00
5000253	CF212-100-DS-0.470	2.12	1.01	0.47	4	0.27	\$29.00
5000254	CF275-000-DS-0.500	2.72	-	0.50	6	0.27	\$50.00
5000255	CF275-025-DS-0.500	2.72	0.26	0.50	6	0.27	\$50.00
5000256	CF275-050-DS-0.500	2.72	0.51	0.50	6	0.27	\$50.00
5000257	CF275-075-DS-0.500	2.72	0.76	0.50	6	0.27	\$50.00
5000258	CF275-100-DS-0.500	2.72	1.01	0.50	6	0.27	\$50.00
5000259	CF275-125-DS-0.500	2.72	1.26	0.50	6	0.27	\$50.00
5000260	CF275-150-DS-0.500	2.72	1.51	0.50	6	0.27	\$50.00
5000261	CF275-000-DS-0.750	2.72	-	0.75	6	0.27	\$50.00
5000262	CF275-150-DS-0.750	2.72	1.51	0.75	6	0.27	\$50.00
5008261	CF275-000-DS-1.0	2.72	-	1.00	6	0.27	\$50.00
5008262	CF275-150-DS-1.0	2.72	1.51	1.00	6	0.27	\$50.00
5000263	CF338-000-DS-0.625	3.38	-	0.62	8	0.33	\$72.00
5000264	CF338-150-DS-0.625	3.38	1.51	0.62	8	0.33	\$72.00
5000265	CF338-200-DS-0.625	3.38	2.01	0.62	8	0.33	\$72.00
5000266	CF450-000-DS-0.680	4.47	-	0.68	8	0.33	\$94.00
5000267	CF450-150-DS-0.680	4.47	1.51	0.68	8	0.33	\$94.00
5000268	CF450-200-DS-0.680	4.47	2.01	0.68	8	0.33	\$94.00

CF Double-Sided Flanges continued

PART #	REFERENCE ID	FLANGE O.D. (in)	A (in)	B (in)	BOLT HOLES		UNIT PRICE
					#	DIA/THRD	
5000269	CF450-250-DS-0.680	4.47	2.51	0.68	8	0.33	\$94.00
5000270	CF462-000-DS-0.750	4.62	-	0.75	10	0.33	\$118.00
5000271	CF462-300-DS-0.750	4.62	3.01	0.75	10	0.33	\$118.00
5000272	CF600-000-DS-0.780	5.97	-	0.78	16	0.33	\$155.00
5000273	CF600-400-DS-0.780	5.97	4.01	0.78	16	0.33	\$155.00
5000274	CF675-000-DS-0.840	6.75	-	0.84	18	0.33	\$185.00
5000275	CF675-500-DS-0.840	6.75	5.01	0.84	18	0.33	\$185.00
5000276	CF800-000-DS-0.880	7.97	-	0.87	20	0.33	\$195.00
5000277	CF800-600-DS-0.880	7.97	6.02	0.87	20	0.33	\$195.00
5000278	CF1000-000-DS-0.970	9.97	-	0.97	24	0.33	\$310.00
5000279	CF1000-800-DS-0.970	9.97	8.02	0.97	24	0.33	\$310.00
5000280	CF1325-000-DS-1.120	13.25	-	1.12	30	0.39	\$730.00
5000281	CF1325-1000-DS-1.120	13.25	10.03	1.12	30	0.39	\$730.00
5000282	CF1400-000-DS-1.120	14.00	-	1.12	30	0.39	\$994.00
5000283	CF1400-1200-DS-1.120	14.00	12.03	1.12	30	0.39	\$994.00
5000284	CF1650-000-DS-1.120	16.50	-	1.12	36	0.39	CALL
5000285	CF1650-1400-DS-1.120	16.50	14.03	1.12	36	0.39	CALL

CF Double-Sided Flange Fasteners – Hex-Head Bolt Kit



Materials:

- Hex-head bolt: stainless steel or silver plated stainless steel
- Hardware (nut and washer): stainless steel

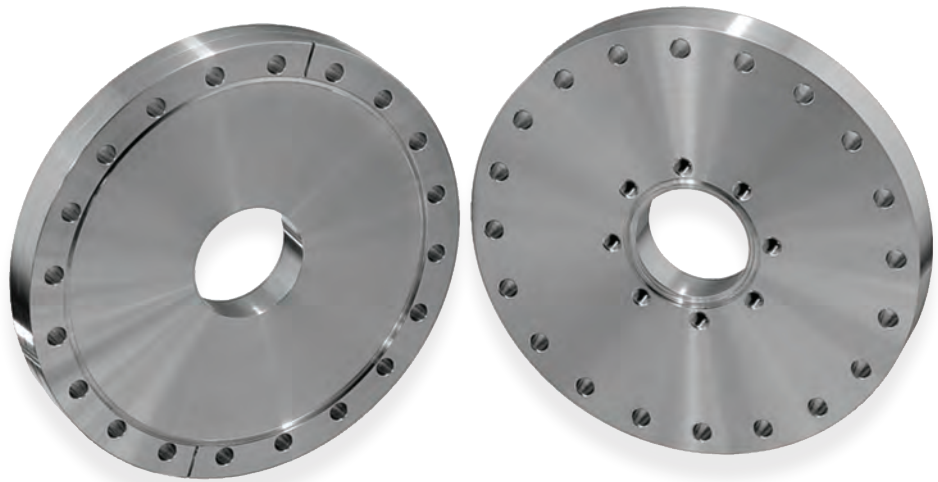
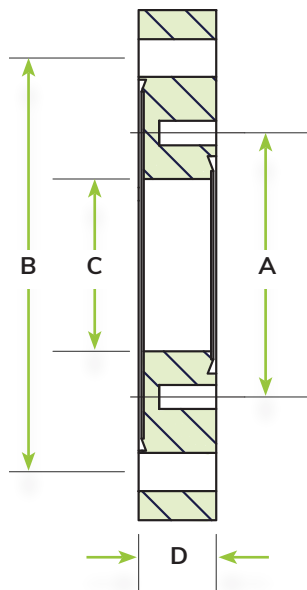
Product Notes:

- Extended length bolts to fasten three CF flanges in one assembly

PART #	REFERENCE ID	USE WITH FLANGE	DESCRIPTION	UNIT PRICE
0605087	CF133-DSHBK	CF133	(25) Bolt, Nut & Washer Kit; 8-32x1 1/4 in.	\$15.00
0605088	CF212-DSHBK	CF212	(25) Bolt, Nut & Washer Kit; 1/4-28x1 3/4 in.	\$20.00
0605089	CF275-DSHBK	CF275	(25) Bolt, Nut & Washer Kit; 1/4-28x1 3/4 in.	\$20.00
0605090	CF275-DSHBK-.750	CF275	(25) Bolt, Nut & Washer Kit; 1/4-28x2 in.	\$25.00
0605092	CF338-DSHBK	CF338	(25) Bolt, Nut & Washer Kit; 5/16-24x2 1/2 in.	\$27.00
0605093	CF450-DSHBK	CF450	(25) Bolt, Nut & Washer Kit; 5/16-24x2 3/4 in.	\$35.00
0605094	CF462-DSHBK	CF462	(25) Bolt, Nut & Washer Kit; 5/16-24x3 in.	\$38.00
0605095	CF600-DSHBK	CF600	(25) Bolt, Nut & Washer Kit; 5/16-24x3 in.	\$38.00
0605096	CF675-DSHBK	CF675	(25) Bolt, Nut & Washer Kit; 5/16-24x3 in.	\$38.00
0605097	CF800-DSHBK	CF800	(25) Bolt, Nut & Washer Kit; 5/16-24x3 in.	\$38.00
0605098	CF1000-DSHBK	CF1000	(25) Bolt, Nut & Washer Kit; 5/16-24x3 1/2 in.	\$45.00
0605099	CF1325-DSHBK	CF1325	(30) Bolt, Nut and Washer Kit; 3/8-24x4 in.	\$85.00
0605100	CF1400-DSHBK	CF1400	(30) Bolt, Nut and Washer Kit; 3/8-24x4 in.	\$85.00
0605101	CF1650-DSHBK	CF1650	(36) Bolt, Nut and Washer Kit; 3/8-24x4 in.	\$105.00

CF Zero Length Reducer Flanges

2
CF Zero Length Reducer Flanges



ORDERING NOTE: When ordering hardware for your Zero Length Reducer take note of the flange bolt holes to order clearance bolts kits and tapped bolt kits appropriate to the design of your flange. "T1" and "T2" designate one or both sets of bolt holes are tapped. The smaller flange is always tapped. Zero Length Reducers are only the width of 1 standard CF flange.

Product Features:

- Different size CF flange on both sides
- Enable direct assembly of two different size CF flanges with minimal impact to space needed within your vacuum system.
- At least one and when necessary both flanges have tapped bolt holes – see line item descriptions for details
- Use standard CF gaskets to seal
- Self-aligning
- Sexless flanges
- Interchangeable with other ConFlat® style flanges
- Adapters to other flange systems available

Product Specifications:

- Pressure range: UHV (approx. 1×10^{-13} Torr)
- Temperature range: -200°C up to 450°C
- Standard materials: 304L stainless steel

Options: Call for price and availability

- Tapped bolt holes
- Alternative materials: 316L stainless steel, aluminum, etc.

PART #	REFERENCE ID	SIDE A	SIDE B	C (in)	D (in)	UNIT PRICE
5000286	CF212TXCF133BT-075-ZLR-0.470	CF212T-075	CF133BT-075	0.62	0.47	\$65.00
5000287	CF275XCF133BT-075-ZLR-0.500	CF275-075	CF133BT-075	0.62	0.50	\$72.00
5000288	CF275TXCF212BT-100-ZLR-0.500	CF275T-100	CF212BT-100	1.00	0.50	\$75.00
5000289	CF338XCF133BT-075-ZLR-0.625	CF338-075	CF133BT-075	0.62	0.62	\$103.00
5000290	CF338TXCF212BT-100-ZLR-0.625	CF338T-100	CF212BT-100	1.00	0.62	\$78.00
5000291	CF338TXCF275BT-150-ZLR-0.625	CF338T-150	CF275BT-150	1.50	0.62	\$103.00
5000292	CF450XCF133BT-075-ZLR-0.680	CF450-075	CF133BT-075	0.62	0.68	\$105.00
5000293	CF450XCF212BT-100-ZLR-0.680	CF450-100	CF212BT-100	1.00	0.68	\$105.00
5000294	CF450XCF275BT-150-ZLR-0.680	CF450-150	CF275BT-150	1.50	0.68	\$105.00
5000295	CF450TXCF338BT-200-ZLR-0.680	CF450T-200	CF338BT-200	2.00	0.68	\$120.00
5000296	CF462XCF133BT-075-ZLR-0.750	CF462-075	CF133BT-075	0.62	0.75	\$120.00
5000297	CF462XCF212BT-100-ZLR-0.750	CF462-100	CF212BT-100	1.00	0.75	\$120.00
5000298	CF462XCF275BT-150-ZLR-0.750	CF462-150	CF275BT-150	1.50	0.75	\$120.00
5000299	CF462XCF338BT-200-ZLR-0.750	CF462-200	CF338BT-200	2.00	0.75	\$120.00

CF Zero Length Reducer Flanges continued

PART #	REFERENCE ID	SIDE A	SIDE B	C (in)	D (in)	UNIT PRICE
5000300	CF600XCF133BT-075-ZLR-0.780	CF600-075	CF133BT-075	0.62	0.78	\$140.00
5000301	CF600XCF212BT-100-ZLR-0.780	CF600-100	CF212BT-100	1.00	0.78	\$140.00
5000302	CF600XCF275BT-150-ZLR-0.780	CF600-150	CF275BT-150	1.50	0.78	\$140.00
5000303	CF600XCF338BT-200-ZLR-0.780	CF600-200	CF338BT-200	2.00	0.78	\$155.00
5000304	CF600XCF450BT-250-ZLR-0.780	CF600-250	CF450BT-250	2.50	0.78	\$160.00
5000305	CF600TXCF462BT-300-ZLR-0.780	CF600-300T	CF462BT-300	3.00	0.78	\$175.00
5000306	CF675XCF133BT-075-ZLR-0.840	CF675-075	CF133BT-075	0.62	0.84	\$165.00
5000307	CF675XCF212BT-100-ZLR-0.840	CF675-100	CF212BT-100	1.00	0.84	\$165.00
5000308	CF675XCF275BT-150-ZLR-0.840	CF675-150	CF275BT-150	1.50	0.84	\$165.00
5000309	CF675XCF338BT-200-ZLR-0.840	CF675-200	CF338BT-200	2.00	0.84	\$185.00
5000310	CF675XCF450BT-250-ZLR-0.840	CF675-250	CF450BT-250	2.50	0.84	\$185.00
5000311	CF675XCF462BT-300-ZLR-0.840	CF675-300	CF462BT-300	3.00	0.84	\$185.00
5000312	CF675TXCF600BT-400-ZLR-0.840	CF675T-400	CF600BT-400	4.00	0.84	\$185.00
5000313	CF800XCF133BT-075-ZLR-0.880	CF800-075	CF133BT-075	0.62	0.88	\$185.00
5000314	CF800XCF212BT-100-ZLR-0.880	CF800-100	CF212BT-100	1.00	0.88	\$185.00
5000315	CF800XCF275BT-150-ZLR-0.880	CF800-150	CF275BT-150	1.50	0.88	\$185.00
5000316	CF800XCF338BT-200-ZLR-0.880	CF800-200	CF338BT-200	2.00	0.88	\$185.00
5000317	CF800XCF450BT-250-ZLR-0.880	CF800-250	CF450BT-250	2.50	0.88	\$185.00
5000318	CF800XCF462BT-300-ZLR-0.880	CF800-300	CF462BT-300	3.00	0.88	\$195.00
5000319	CF800XCF600BT-400-ZLR-0.880	CF800-400	CF600BT-400	4.00	0.88	\$195.00
5000320	CF800TXCF675BT-500-ZLR-0.880	CF800T-500	CF675BT-500	5.00	0.88	\$195.00
5000321	CF1000xCF133BT-0750-ZLR-0.970	CF1000-075	CF133BT-075	0.62	0.97	\$300.00
5000322	CF1000XCF212BT-100-ZLR-0.970	CF1000-100	CF212BT-100	1.00	0.97	\$300.00
5000323	CF1000XCF275BT-150-ZLR-0.970	CF1000-150	CF275BT-150	1.50	0.97	\$300.00
5000324	CF1000XCF338BT-200-ZLR-0.970	CF1000-200	CF338BT-200	2.00	0.97	\$325.00
5000325	CF1000XCF450BT-250-ZLR-0.970	CF1000-250	CF450BT-250	2.50	0.97	\$325.00
5000326	CF1000XCF462BT-300-ZLR-0.970	CF1000-300	CF462BT-300	3.00	0.97	\$325.00
5000327	CF1000XCF600BT-400-ZLR-0.970	CF1000-400	CF600BT-400	4.00	0.97	\$360.00
5000328	CF1000XCF675BT-500-ZLR-0.970	CF1000-500	CF675BT-500	5.00	0.97	\$360.00
5000329	CF1000XCF800BT-600-ZLR-0.970	CF1000-600	CF800BT-600	6.00	0.97	\$360.00
5000330	CF1325XCF133BT-075-ZLR-1.120	CF1325-075	CF133BT-075	0.62	1.12	\$540.00
5000331	CF1325XCF212BT-100-ZLR-1.120	CF1325-100	CF212BT-100	1.00	1.12	\$540.00
5000332	CF1325XCF275BT-150-ZLR-1.120	CF1325-150	CF275BT-150	1.50	1.12	\$540.00
5000333	CF1325XCF338BT-200-ZLR-1.120	CF1325-200	CF338BT-200	2.00	1.12	\$565.00
5000334	CF1325XCF450BT-250-ZLR-1.120	CF1325-250	CF450BT-250	2.50	1.12	\$565.00
5000335	CF1325XCF462BT-300-ZLR-1.120	CF1325-300	CF462BT-300	3.00	1.12	\$565.00
5000336	CF1325XCF600BT-400-ZLR-1.120	CF1325-400	CF600BT-400	4.00	1.12	\$595.00
5000337	CF1325XCF675BT-500-ZLR-1.120	CF1325-500	CF675BT-500	5.00	1.12	\$595.00
5000338	CF1325XCF800BT-600-ZLR-1.120	CF1325-600	CF800BT-600	6.00	1.12	\$595.00
5000339	CF1325XCF1000BT-800-ZLR-1.120	CF1325-800	CF1000BT-800	8.00	1.12	\$595.00

2
CF Flange to Female NPT

CF Flange to Female NPT – Front Port

Product Features:

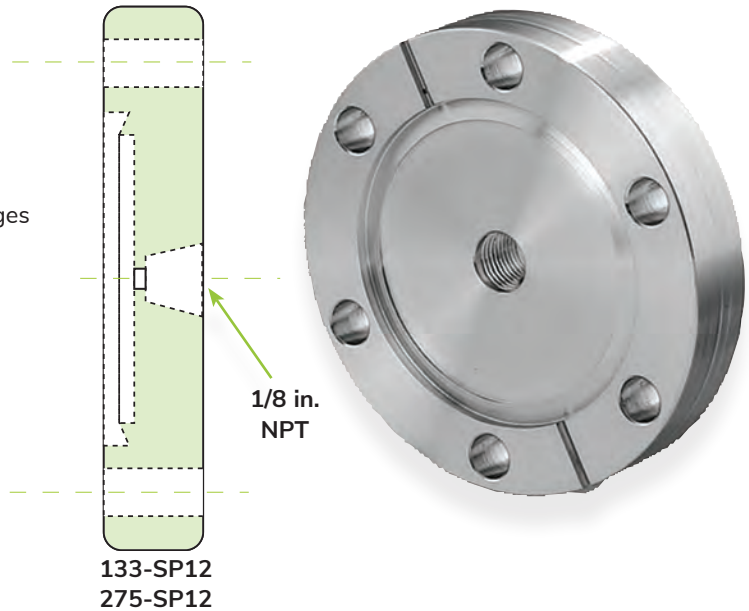
- Ideal for adding vacuum accessories (vacuum measurement, valves, etc.) or gas lines to your system.
- Use standard CF gaskets to seal
- Self-aligning
- Sexless flanges
- Interchangeable with other ConFlat® style flanges
- Adapters to other flange systems available

Product Specifications:

- Pressure range: UHV (approx. 1×10^{-13} Torr)
- Temperature range: -200°C up to 450°C
- Standard materials: 304L stainless steel

Options: Call for price and availability

- Tapped bolt holes
- Alternative materials: 316L stainless steel, aluminum, etc.



PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
5000208	CF133XFNPT12	1.33 Flange - (1) 1/8 in. NPT Hole	\$50.00
5000209	CF275XFNPT12	2.75 Flange - (1) 1/8 in. NPT Hole	\$32.00

CF Double-Sided Flange to Female NPT – Side Port(s)

Product Features:

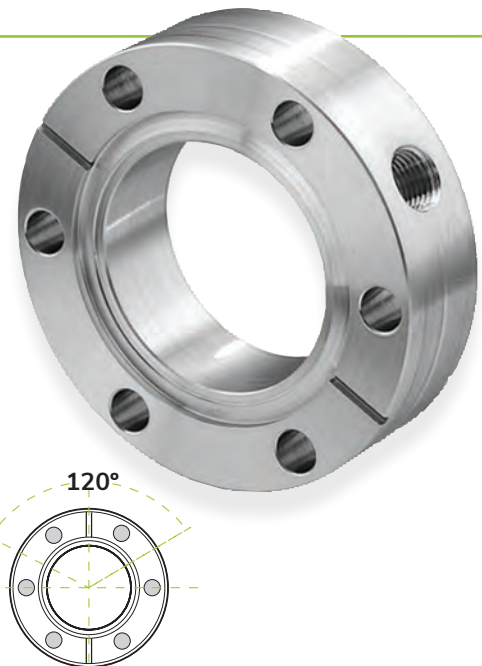
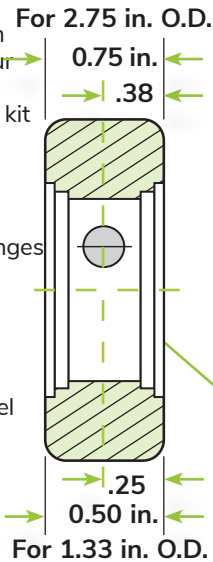
- Ideal for adding vacuum accessories (vacuum measurement, valves, etc.) or gas lines to your system.
- Requires special CF double-sided flange bolt kit for fastening
- Use standard CF gaskets to seal
- Self-aligning
- Sexless flanges
- Interchangeable with other ConFlat® style flanges
- Adapters to other flange systems available

Product Specifications:

- Pressure range: UHV (approx. 1×10^{-13} Torr)
- Temperature range: -200°C up to 450°C
- Standard materials: 304L grade stainless steel

Options: Call for price and availability

- Tapped bolt holes
- Alternative materials – 316L stainless steel, aluminum, etc.



PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
5000220	CF133DXFNPT06-SPC	1.33 Flange - (1) 1/16 in. NPT Hole	\$91.00
5000221	CF275DXFNPT12-SPC	2.75 Flange - (1) 1/8 in. NPT Hole	\$32.00
5000222	CF133DXFNPT06-2X-SPC	1.33 Flange - (2) 1/16 in. NPT Holes	\$90.00
5000223	CF275DXFNPT12-2X-SPC	2.75 Flange - (2) 1/8 in. NPT Holes	\$32.00

CF Double-Sided Flange to CF133 flange – Side Port

Product Features:

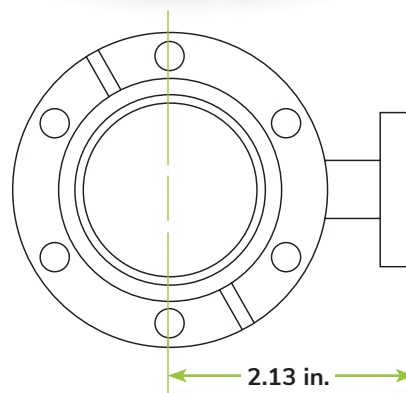
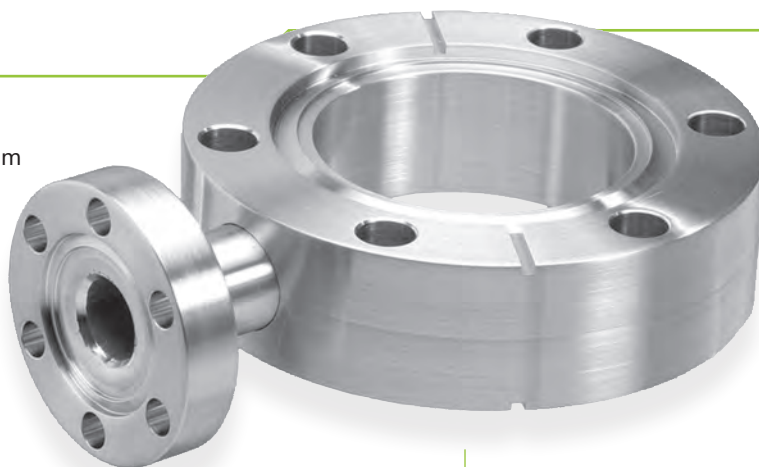
- Ideal for adding vacuum accessories (vacuum measurement, valves, etc.) to your system.
- Requires special CF double-sided flange bolt kit for fastening
- Use standard CF gaskets to seal
- Self-aligning
- Sexless flanges
- Interchangeable with other ConFlat® style flanges
- Adapters to other flange systems available

Product Specifications:

- Pressure range: UHV (approx. 1×10^{-13} Torr)
- Temperature range: -200°C up to 450°C
- Standard materials: 304 grade stainless steel

Options: Call for price and availability

- Tapped bolt holes
- Alternative materials: 316 stainless steel, aluminum, etc.



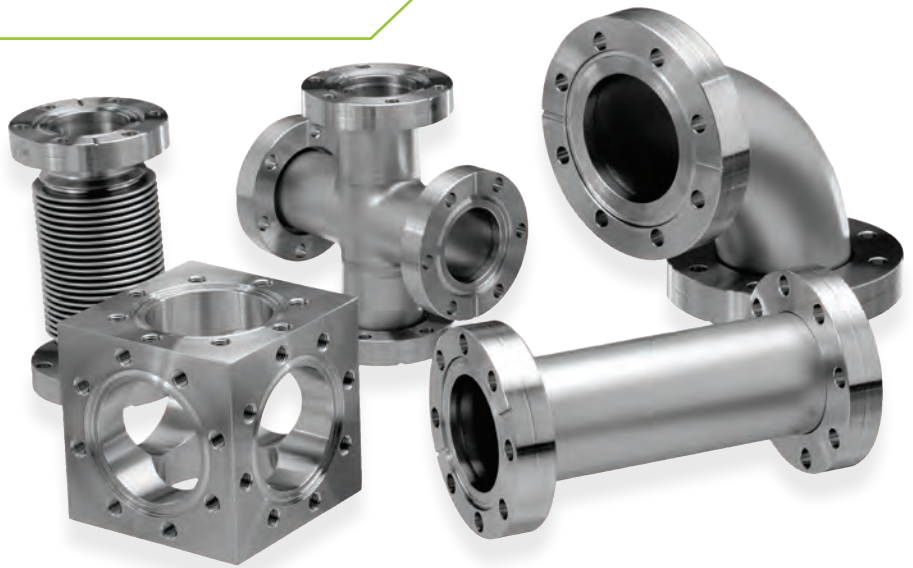
2 CF Double-Sided Flange to CF133 Flange

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
5000244	CF275DSXCF133-SPC	CF275 SS Double with 1.33 Flange Port	\$150.00

CF Fittings

ANCORP's CF fittings make up a complete set of modular components that allow our customers to create a custom vacuum system without the trouble and expense of having in-house machining and welding capabilities.

All ANCORP CF fittings are made with flanges manufactured to industry specifications to ensure compatibility with other manufacturers' flanges.



Product Specifications:

- Vacuum rated to 1×10^{-13} Torr.
- Leak rating $< 1 \times 10^{-9}$ std. cc/s helium
- Temperature range: -200°C to 450°C
- Standard materials:
 - Flanges and fittings: 304L stainless steel
 - Seals: OFHC copper for ultra high vacuum (UHV) or Viton® for high vacuum (HV)
- Standard sizes:
 - CF flanges outer diameter: 1 1/3 inches to 16 1/2 inches (for tubing diameter 1/4 inch up to 14 inches)
 - Wire seal flanges outer diameter: 12 3/8 inches up to 27 1/8 inches (for tubing diameter 10 inches up to 24 inches)

Product Features:

- Reusable flanges
- All-metal seals
- Sexless flanges
- Rotatable flanges for easier bolt hole alignment
- Tapped or clearance bolt holes available
- Adapters to other flange systems available
- Compatible with U.S. Standard (imperial) and metric measurements
- Interchangeable with other ConFlat® style flanges made to industry standards

Nipples



Nipples are manufactured with a flange on each end of a straight section of tubing. Nipples are used to create a weld free straight connection within a vacuum system. Nipples are also used as straight adapters between different tubing sizes or flange types. These fittings are available in all CF sizes and flange types. ANCORP manufactures standard nipples in 304L stainless steel, other materials are available on request.

Half Nipples



Half Nipples are manufactured with a flange on one end and raw tubing on the other. Half nipples are often welded onto a custom vacuum system or instrument by a customer with in-house welding capabilities. However, these fittings can also be used with quick disconnect compression fittings to make a vacuum tight connection without welding. ANCORP manufactures standard half nipples in 304L stainless steel, other materials are available on request.

Elbows



Elbows are manufactured with a flange on each end of a curved section of tubing. Elbows accommodate turns or alignment considerations for vacuum system design. Elbows are offered in four designs; 45° radius elbow, 90° radius elbow, 90° mitered elbow and 90° mitered high conductance elbow to accommodate a wide variety of system configurations. **ANCORP** manufactures standard Elbows in 304L stainless steel, other materials are available on request.

Tees



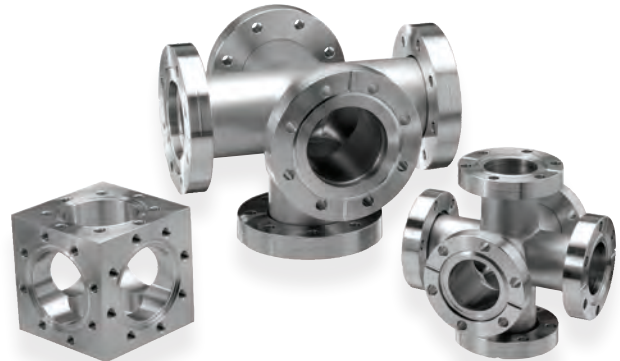
Tees are manufactured with a flange on each end of a “T” shaped section of tubing. Tees accommodate junctions or alignment considerations for vacuum system design. Tees are also used as junction adapters between different tubing sizes or flange types. **ANCORP** manufactures standard tees in 304L stainless steel, other materials are available on request.

Crosses



Crosses are manufactured with a flange on each end of an “X” shaped section of tubing. Crosses accommodate junctions or alignment considerations for vacuum system design. Crosses are also used as junction adapters between different tubing sizes or flange types. **ANCORP** manufactures standard crosses in 304L stainless steel, other materials are available on request.

5-Way & 6-Way Crosses and cubes



These fittings are manufactured with a flange on each end of a 5 or 6 sided tubing junction. These Crosses accommodate complex junctions or alignment considerations for vacuum system design. Larger sizes are sometimes used as the starting point of a simple vacuum chamber design. **ANCORP** manufactures standard 5 and 6-way crosses and cubes in 304L stainless steel, other materials are available on request. Cubes machined from a solid piece.

CF Half Nipple - Fixed Flange

Materials:

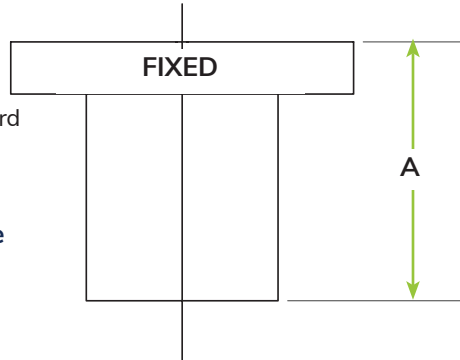
- 304L stainless steel

Product Notes:

- Clearance and tapped bolt holes
- Butt weld
- Designed to fit standard inch tubing O.D.'s
- Highly customizable

Options: Call for price and availability

- Custom lengths
- Alternative materials:
316L stainless steel
aluminum



ORDERING NOTE: This listing is for Rotatable CF Flange Half Nipples. For Fixed Half Nipples see pg. 2.70.

Clearance Bolt Holes

PART #	REFERENCE ID	FLANGE TYPE	TUBE O.D. (in)	A (in)	UNIT PRICE
5000340	CF133-075-HN-1.50	CF133	0.75	1.50	\$40.00
5000341	CF212-100-HN-2.05	CF212	1.00	2.05	\$40.00
5000342	CF275-150-HN-2.46	CF275	1.50	2.46	\$42.00
5000343	CF338-200-HN-3.21	CF338	2.00	3.21	\$55.00
5000344	CF450-250-HN-3.38	CF450	2.50	3.38	\$75.00
5000346	CF462-300-HN-3.53	CF462	3.00	3.53	\$125.00
5000347	CF600-400-HN-4.32	CF600	4.00	4.32	\$160.00
5000349	CF675-500-HN-4.32	CF675	5.00	4.32	\$175.00
5000350	CF800-600-HN-5.50	CF800	6.00	5.50	\$235.00
5000352	CF1000-800-HN-8.00	CF1000	8.00	8.00	\$415.00
5000353	CF1325-1000-HN-10.00	CF1325	10.00	10.00	\$950.00
5000354	CF1400-1200-HN-10.00	CF1400	12.00	10.00	\$950.00

Tapped Bolt Holes

PART #	REFERENCE ID	FLANGE TYPE	TUBE O.D. (in)	A (in)	UNIT PRICE
5000372	CF133T-075-HN-1.50	CF133	0.75	1.50	\$42.00
5000375	CF212T-100-HN-2.05	CF212	1.00	2.05	\$44.00
5000378	CF275T-150-HN-2.46	CF275	1.50	2.46	\$46.00
5000381	CF338T-200-HN-3.21	CF338	2.00	3.21	\$85.00
5000384	CF450T-250-HN-3.38	CF450	2.50	3.38	\$135.00
5000389	CF462T-300-HN-3.53	CF462	3.00	3.53	\$160.00
5000392	CF600T-400-HN-4.32	CF600	4.00	4.32	\$170.00
5000397	CF675T-500-HN-4.32	CF675	5.00	4.32	CALL
5000400	CF800T-600-HN-5.50	CF800	6.00	5.50	\$315.00

Product Note:

There are two terms used within this catalog that require definition.

Reducer Fittings are used to reduce the size of flanges and tubing used within the same flange family. For example, CF600 to CF275 or

ISO-LF63 to ISO-QF40. These products are listed with the fittings components for that flange family.

Adapter Fittings are used to change from one family of flanges to another. For example, ISO-QF25 to CF275.

CF Half Nipple – Rotatable Flange

Materials:

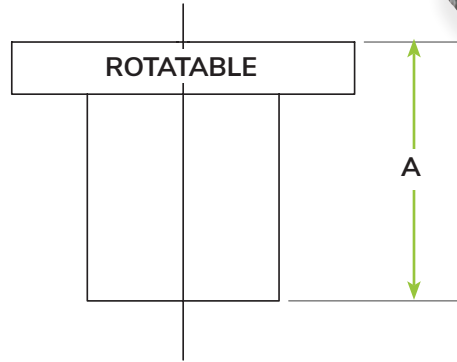
- 304L stainless steel

Product Notes:

- Clearance and tapped bolt holes
- Butt weld
- Designed to fit standard inch tubing O.D.'s
- Highly customizable

Options: Call for price and availability

- Custom lengths
- Alternative materials:
316L stainless steel
Aluminum



2

CF Half Nipple

ORDERING NOTE: This listing is for Rotatable CF Flange Half Nipples. For Fixed Half Nipples see pg. 2.70.

Clearance Bolt Holes

PART #	REFERENCE ID	FLANGE TYPE	TUBE O.D. (in)	A (in)	UNIT PRICE
5000371	CF133R-075-HN-1.50	CF133	0.75	1.50	\$41.00
5000374	CF212R-100-HN-2.05	CF212	1.00	2.05	\$45.00
5000377	CF275R-150-HN-2.46	CF275	1.50	2.46	\$44.00
5000380	CF338R-200-HN-3.21	CF338	2.00	3.21	\$82.00
5000383	CF450R-250-HN-3.38	CF450	2.50	3.38	\$125.00
5000388	CF462R-300-HN-3.53	CF462	3.00	3.53	\$155.00
5000391	CF600R-400-HN-4.32	CF600	4.00	4.32	\$170.00
5000396	CF675R-500-HN-4.32	CF675	5.00	4.32	CALL
5000399	CF800R-600-HN-5.50	CF800	6.00	5.50	\$320.00

Tapped Bolt Holes

PART #	REFERENCE ID	FLANGE TYPE	TUBE O.D. (in)	A (in)	UNIT PRICE
5000373	CF133RT-075-HN-1.50	CF133	0.75	1.50	\$45.00
5000376	CF212RT-100-HN-2.05	CF212	1.00	2.05	\$47.00
5000379	CF275RT-150-HN-2.46	CF275	1.50	2.46	\$49.00
5000382	CF338RT-200-HN-3.21	CF338	2.00	3.21	\$91.00
5000385	CF450RT-250-HN-3.38	CF450	2.50	3.38	\$150.00
5000390	CF462RT-300-HN-3.53	CF462	3.00	3.53	\$165.00
5000393	CF600RT-400-HN-4.32	CF600	4.00	4.32	\$185.00
5000398	CF675RT-500-HN-4.32	CF675	5.00	4.32	CALL
5000401	CF800RT-600-HN-5.50	CF800	6.00	5.50	\$335.00

CF Nipple

Materials:

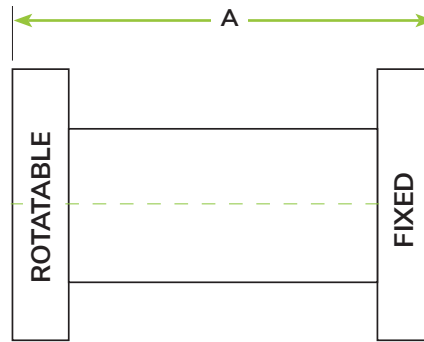
- 304L stainless steel

Product Notes:

- Same size flange on both ends
- Clearance bolt holes standard
- One fixed and one rotatable flange per fitting
- Highly customizable

Options: Call for price and availability

- For tapped flanges add "T" to the end of the flange number. Example: CF133T-075
- Custom lengths and flange combinations
- Alternative materials: 316L stainless steel, aluminum, etc.



PART #	REFERENCE ID	FLANGE TYPE	TUBE O.D. (in)	A (in)	UNIT PRICE
5000355	CF133-075-N-3.00	CF133	0.75	3.00	\$60.00
5000356	CF212-100-N-4.10	CF212	1.00	4.10	\$65.00
5000357	CF275-150-N-4.93	CF275	1.50	4.93	\$72.00
5000358	CF338-200-N-6.43	CF338	2.00	6.43	\$150.00
5000359	CF450-250-N-6.76	CF450	2.50	6.76	\$175.00
5000360	CF450-250-N-8.25	CF450	2.50	8.25	\$225.00
5000361	CF462-300-N-7.06	CF462	3.00	7.06	\$200.00
5000362	CF600-400-N-8.64	CF600	4.00	8.64	\$260.00
5000363	CF600-400-N-10.62	CF600	4.00	10.62	\$300.00
5000364	CF675-500-N-8.46	CF675	5.00	8.46	\$435.00
5000365	CF675-500-N-9.87	CF675	5.00	9.87	\$440.00
5000366	CF800-600-N-11.00	CF800	6.00	11.00	\$505.00
5000367	CF800-600-N-13.12	CF800	6.00	13.12	\$530.00
5000368	CF1000-800-N-16.00	CF1000	8.00	16.00	\$850.00
5000369	CF1325-1000-N-20.00	CF1325	10.00	20.00	\$1,280.00
5000370	CF1400-1200-N-20.00	CF1400	12.00	20.00	CALL

CF Flexible Nipple

Materials:

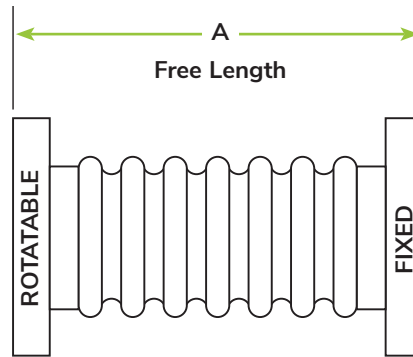
- Flanges: 304 stainless steel
- Flexible hose: 321 Stainless steel formed bellows

Product Notes:

- Corrects misaligned connections
- Compress up to 20% or extend up to 15% of free length

Options: Call for price and availability

- Custom lengths
- Tapped flanges
- Custom flange combination
- Alternative materials: 316L stainless steel



2

CF Flexible Nipple

PART #	REFERENCE ID	FLANGE TYPE	HOSE I.D. (in)	WALL THICKNESS (in)	A (in)	UNIT PRICE
0800089	CF133-075-B-4.0	CF133	0.75	0.006	4.00	\$155.00
0800092	CF212-100-B-4.0	CF212	1.00	0.006	4.00	\$155.00
0800095	CF275-150-B-4.0	CF275	1.50	0.006	4.00	\$190.00
0800098	CF338-150-B-4.0	CF338	2.00	0.006	4.00	\$230.00
0800099	CF450-250-B-6.0	CF450	2.50	0.008	6.00	\$400.00
0800100	CF462-300-B-6.0	CF462	3.00	0.008	6.00	\$360.00
0800101	CF600-400-B-6.4	CF600	4.00	0.010	6.40	\$505.00
0800103	CF800-600-B-8.5	CF800	6.00	0.012	8.50	\$755.00

CF Straight Reducer Nipple

Materials:

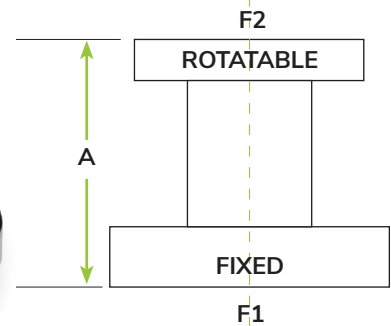
- 304L stainless steel

Product Notes:

- Connects different size CF Flanges

Options: Call for price and availability

- Custom lengths
- Tapped flanges
- Custom flange combinations
- Alternative materials: 316L stainless steel, aluminum, etc.



PART #	REFERENCE ID	FLANGE 1 O.D. (in)	FLANGE 2 O.D. (in)	TUBE O.D. (in)	A (in)	UNIT PRICE
5000429	CF275XCF133R-075-N-2.50	2.72	1.33	0.75	2.50	\$70.00
5000925	CF338XCF275R-150-N-2.50	3.38	2.72	1.50	2.50	\$135.00
5000926	CF450XCF275R-150-N-2.50	4.47	2.72	1.50	2.50	\$165.00
5000430	CF600XCF275R-150-N-5.00	5.97	2.72	1.50	5.00	\$185.00
5000927	CF600XCF450R-250-N-5.00	5.97	4.47	2.50	5.00	\$340.00
5000431	CF800XCF275R-150-N-5.00	7.97	2.72	1.50	5.00	\$315.00
5000432	CF800XCF450R-250-N-5.00	7.97	4.47	2.50	5.00	\$355.00
5000433	CF800XCF600R-400-N-5.00	7.97	5.97	4.00	5.00	\$375.00
5000434	CF1000XCF275R-150-N-5.00	9.97	2.72	1.50	5.00	\$545.00
5000435	CF1000XCF450R-250-N-5.00	9.97	4.47	2.50	5.00	\$585.00
5000436	CF1000XCF600R-400-N-5.00	9.97	5.97	4.00	5.00	\$605.00
5000437	CF1000XCF800R-600-N-5.00	9.97	7.97	6.00	5.00	\$635.00
5000438	CF1325XCF1000R-800-N-5.00	13.25	9.97	8.00	5.00	\$1,050.00
5000439	CF1400XCF1200R-1000-N-5.00	14.00	11.97	10.00	5.00	\$1,450.00

CF Conical Reducer Nipple

Materials:

- 304L stainless steel

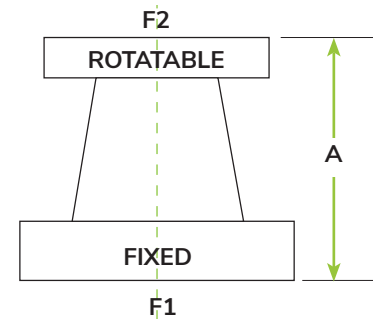
Product Notes:

- Connects different size CF flanges
- Maximizes conductance during transition to smaller size tubing

Options:

Call for price and availability

- Tapped flanges
- Custom flange combinations
- Alternative materials: 316L stainless steel



PART #	REFERENCE ID	FLANGE 1		FLANGE 2 O.D. (in)		A (in)	UNIT PRICE
		TYPE	TUBE O.D.	TYPE	TUBE O.D.		
5000440	CF212XCF133R-100X075-CR-2.04	CF212	1.00	CF133	0.75	2.04	\$140.00
5000441	CF275XCF133R-150X075-CR-3.08	CF275	1.50	CF133	0.75	3.08	\$95.00
5000442	CF275XCF212R-150X100-CR-2.75	CF275	1.50	CF212	1.00	2.75	\$95.00
5000443	CF338XCF212R-200X100-CR-2.77	CF338	2.00	CF212	1.00	2.77	\$110.00
5000444	CF338XCF275R-200X150-CR-2.81	CF338	2.00	CF275	1.50	2.81	\$135.00
5000445	CF450XCF275R-250X150-CR-2.96	CF450	2.50	CF275	1.50	2.96	\$160.00
5000446	CF450XCF338R-250X200-CR-2.98	CF450	2.50	CF338	2.00	2.98	\$180.00
5000447	CF462XCF275R-300X150-CR-4.21	CF462	3.00	CF275	1.50	4.21	\$170.00
5000448	CF462XCF338R-300X200-CR-4.23	CF462	3.00	CF338	2.00	4.23	\$195.00
5000449	CF462XCF450R-300X250-CR-4.38	CF462	3.00	CF450	2.50	4.38	\$270.00
5000451	CF600XCF338R-400X200-CR-4.29	CF600	4.00	CF338	2.00	4.29	\$260.00
5000452	CF600XCF450R-400X250-CR-4.44	CF600	4.00	CF450	2.50	4.44	\$275.00

CF 45° Elbow

Materials:

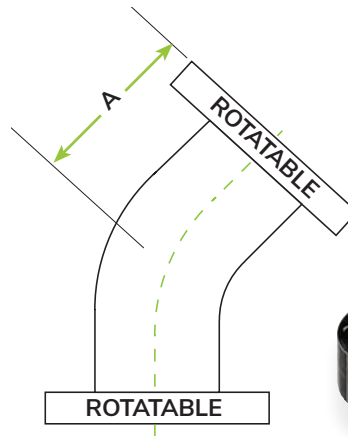
- 304L stainless steel

Product Notes:

- Radius elbow design

Options: Call for price and availability

- Custom lengths
- Tapped flanges
- Custom flange combinations
- Alternative materials: 316L stainless steel



PART #	REFERENCE ID	FLANGE TYPE	TUBE O.D. (in)	A (in)	UNIT PRICE
5000454	CF133-075-E45-1.26	CF133	0.75	1.26	\$89.00
5000455	CF212-100-E45-1.14	CF212	1.00	1.14	\$100.00
5000456	CF275-150-E45-1.74	CF275	1.50	1.74	\$100.00
5000457	CF338-200-E45-2.07	CF338	2.00	2.07	\$178.00
5000458	CF450-250-E45-3.38	CF450	2.50	3.38	\$232.00
5000459	CF462-300-E45-4.06	CF462	3.00	4.06	\$280.00
5000460	CF600-400-E45-5.21	CF600	4.00	5.21	\$390.00

CF 90° Elbow

Materials:

- 304L stainless steel

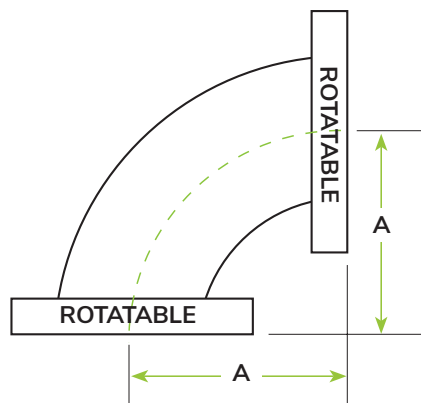
Product Notes:

- Radius elbow design

Options:

Call for price and availability

- Custom lengths
- Tapped flanges
- Custom flange combinations
- Alternative materials: 316L stainless steel



PART #	REFERENCE ID	FLANGE TYPE	TUBE O.D. (in)	A (in)	UNIT PRICE
5000461	CF133-075-E90-1.50	CF133	0.75	1.50	\$65.00
5000462	CF212-100-E90-2.00	CF212	1.00	2.00	\$90.00
5000463	CF275-150-E90-2.46	CF275	1.50	2.46	\$75.00
5000464	CF338-200-E90-3.22	CF338	2.00	3.22	\$120.00
5000465	CF450-250-E90-4.12	CF450	2.50	4.12	\$180.00
5000466	CF462-300-E90-4.88	CF462	3.00	4.88	\$320.00
5000467	CF600-400-E90-6.44	CF600	4.00	6.44	\$350.00
5000468	CF800-600-E90-9.50	CF800	6.00	9.50	\$595.00

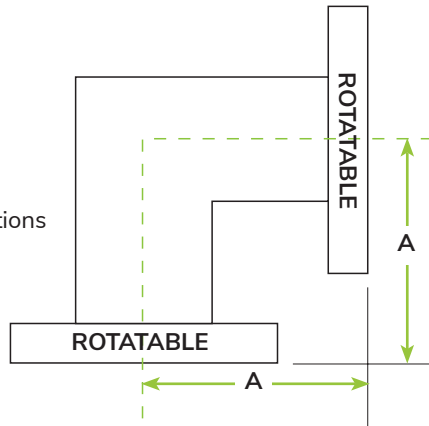
CF 90° Elbow - Mitered

Materials:

- 304L stainless steel

Options: Call for price and availability

- Custom lengths
- Tapped flanges
- Custom flange combinations
- Alternative materials: 316L stainless steel, aluminum, etc.



PART #	REFERENCE ID	FLANGE TYPE	TUBE O.D. (in)	A (in)	UNIT PRICE
5000469	CF133-075-E90M-1.50	CF133	0.75	1.50	\$75.00
5000470	CF212-100-E90M-2.05	CF212	1.00	2.05	\$85.00
5000471	CF212-150-E90M-2.46	CF275	1.50	2.46	\$90.00
5000472	CF338-200-E90M-3.21	CF338	2.00	3.21	\$185.00
5000473	CF450-250-E90M-3.38	CF450	2.50	3.38	\$280.00
5000474	CF450-250-E90M-4.12	CF450	2.50	4.13	\$300.00
5000475	CF462-300-E90M-3.35	CF462	3.00	3.35	\$325.00
5000476	CF600-400-E90M-4.32	CF600	4.00	4.32	\$400.00
5000477	CF600-400-E90M-5.31	CF600	4.00	5.31	\$410.00
5000478	CF675-500-E90M-4.71	CF675	5.00	4.71	CALL
5000479	CF800-600-E90M-5.50	CF800	6.00	5.50	\$570.00
5000480	CF800-600-E90M-6.56	CF800	6.00	6.56	\$580.00
5000481	CF1000-800-E90M-7.50	CF1000	8.00	7.50	\$1,250.00
5000482	CF1325-1000-E90M-10.00	CF1325	10.00	10.00	\$2,750.00

CF 90° Elbow – Mitered, High Conductance

Materials:

- 304L stainless steel

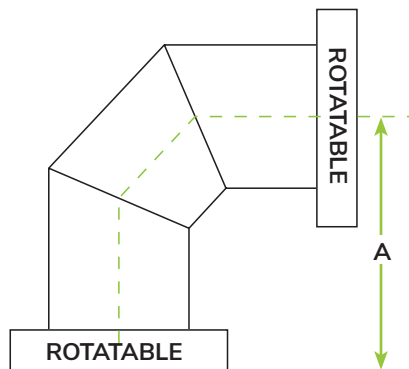
Product Notes:

- High conductance design

Options:

Call for price and availability

- Custom lengths
- Tapped flanges
- Custom flange combinations
- Alternative materials: 316L stainless steel, aluminum, etc.



PART #	REFERENCE ID	FLANGE TYPE	TUBE O.D. (in)	A (in)	UNIT PRICE
5000483	CF800-600-E90MHC-9.50	CF800	6.00	9.50	CALL
5000484	CF1000-800-E90MHC-12.50	CF1000	8.00	12.50	CALL
5000485	CF1325-1000-E90MHC-15.50	CF1325	10.00	15.50	CALL

CF - Tee

Materials:

- 304L stainless steel

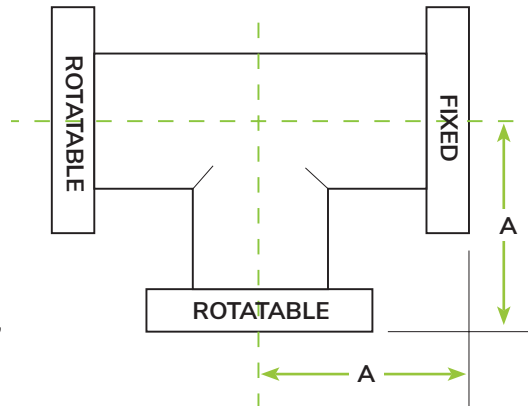
Product Notes

- Pulled ports for optimum vacuum performance

Options:

Call for price and availability

- Custom lengths
- Tapped flanges
- Custom flange combinations
- Alternative materials: 316L stainless steel, aluminum, etc.



2
CF Tee

PART #	REFERENCE ID	FLANGE TYPE	TUBE O.D. (in)	A (in)	UNIT PRICE
5000486	CF133-075-TEE-1.50	CF133	0.75	1.50	\$110.00
5000487	CF212-100-TEE-2.05	CF212	1.00	2.05	\$115.00
5000488	CF275-150-TEE-2.46	CF275	1.50	2.46	\$125.00
5000489	CF275-150-TEE-2.62	CF275	1.50	2.62	\$145.00
5000490	CF338-200-TEE-3.22	CF338	2.00	3.22	\$175.00
5000491	CF450-250-TEE-3.38	CF450	2.50	3.38	\$250.00
5000492	CF450-250-TEE-4.12	CF450	2.50	4.12	\$335.00
5000493	CF462-300-TEE-3.63	CF462	3.00	3.63	\$330.00
5000494	CF600-400-TEE-4.32	CF600	4.00	4.32	\$454.00
5000495	CF600-400-TEE-5.31	CF600	4.00	5.31	\$495.00
5000496	CF675-500-TEE-4.71	CF675	5.00	4.71	\$720.00
5000497	CF800-600-TEE-5.50	CF800	6.00	5.50	\$855.00
5000498	CF800-600-TEE-6.56	CF800	6.00	6.56	\$900.00
5000499	CF1000-800-TEE-7.50	CF1000	8.00	7.50	\$1,675.00
5000500	CF1325-1000-TEE-10.00	CF1325	10.00	10.00	\$2,905.00

CF Reducing Tee

2 CF Reducing Tee

Materials:

- 304L stainless steel

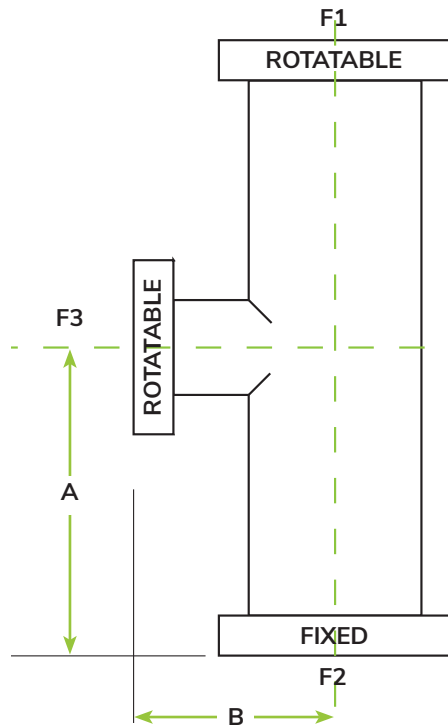
Product Notes

- Pulled ports for optimum vacuum performance
- Reducing intersection for different CF flange sizes

Options:

Call for price and availability

- Custom lengths
- Tapped flanges
- Custom flange combinations
- Alternative materials: 316L stainless steel, aluminum, etc.



PART #	REFERENCE ID	FLANGE 1 & 2		FLANGE 3		A (in)	B (in)	UNIT PRICE
		O.D.	TUBE O.D.	O.D.	TUBE O.D.			
5000501	CF275XCF133-150X075-RDT-2.46X1.87	2.72	1.50	1.33	0.75	2.46	1.87	\$125.00
5000502	CF275XCF212-150X100-RDT-2.30X2.46	2.72	1.50	2.12	1.00	2.46	2.29	\$129.00
5000503	CF338XCF133-200X075-RDT-2.12X3.22	3.38	2.00	1.33	0.75	3.22	2.13	\$253.00
5000504	CF338XCF275-200X150-RDT-2.71X3.22	3.38	2.00	2.72	1.50	3.22	2.71	\$284.00
5000505	CF450XCF338-250X200-RDT-3.38X3.48	4.47	2.50	2.72	1.50	3.38	2.96	\$300.00
5000506	CF462XCF338-300X200-RDT-3.63X3.73	4.47	2.50	3.38	2.00	3.38	3.48	\$320.00
5000507	CF462XCF338-300X200-RDT-3.63X3.73	4.62	3.00	3.38	2.00	3.63	3.73	\$407.00
5000508	CF462XCF450-300X250-RDT-3.63X3.63	4.62	3.00	4.47	2.50	3.63	3.63	\$407.00
5000509	CF600XCF275-400X150-RDT-4.32X3.71	5.97	4.00	2.72	1.50	4.32	3.71	\$500.00
5000510	CF600XCF338-400X200-RDT-4.23X4.32	5.97	4.00	3.38	2.00	4.32	4.23	\$525.00
5000511	CF600XCF450-400X250-RDT-4.13X4.32	5.97	4.00	4.47	2.50	4.32	4.13	\$575.00
5000512	CF600XCF462-400X300-RDT-4.13X4.32	5.97	4.00	4.62	3.00	4.32	4.13	\$585.00
5000513	CF675XCF600-500X400-RDT-4.82X4.71	6.75	5.00	5.97	4.00	4.71	4.82	\$735.00
5000514	CF800XCF275-600X150-RDT-4.71X5.50	7.97	6.00	2.72	1.50	5.50	4.71	\$680.00
5000515	CF800XCF338-600X200-RDT-5.23X5.50	7.97	6.00	3.38	2.00	5.50	5.23	\$700.00
5000516	CF800XCF450-600X250-RDT-5.13X5.50	7.97	6.00	4.47	2.50	5.50	5.13	\$735.00
5000517	CF800XCF600-600X400-RDT-5.32X5.50	7.97	6.00	5.97	4.00	5.50	5.32	\$775.00
5000518	CF1000XCF800-800X600-RDT-7.50X7.50	9.97	8.00	7.97	6.00	7.50	7.50	\$1,425.00

CF Cross

Materials:

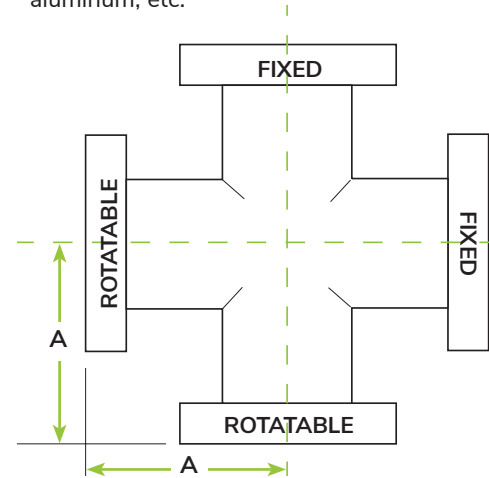
- 304L stainless steel

Options: Call for price and availability

- Custom lengths
- Tapped flanges
- Custom flange combinations
- Alternative materials: 316L stainless steel, aluminum, etc.

Product Notes

- Pulled ports for optimum vacuum performance



2

CF Cross

PART #	REFERENCE ID	FLANGE TYPE	TUBE O.D. (in)	A (in)	UNIT PRICE
5000519	CF133-075-4X-1.50	CF133	0.75	1.50	\$124.00
5000520	CF212-100-4X-2.05	CF212	1.00	2.05	\$160.00
5000521	CF275-150-4X-2.46	CF275	1.50	2.46	\$167.00
5000522	CF338-200-4X-3.22	CF338	2.00	3.23	\$330.00
5000523	CF450-250-4X-3.38	CF450	2.50	3.38	\$433.00
5000524	CF450-250-4X-4.12	CF450	2.50	4.12	\$515.00
5000525	CF462-300-4X-3.63	CF462	3.00	3.63	\$567.00
5000526	CF600-400-4X-4.32	CF600	4.00	4.32	\$680.00
5000527	CF600-400-4X-5.31	CF600	4.00	5.31	\$760.00
5000528	CF675-500-4X-4.71	CF675	5.00	4.71	\$1,240.00
5000529	CF800-600-4X-5.50	CF800	6.00	5.50	\$1,425.00
5000530	CF800-600-4X-6.56	CF800	6.00	6.56	\$1,440.00
5000531	CF1000-800-4X-7.50	CF1000	8.00	7.50	\$2,050.00
5000532	CF1325-1000-4X-10.00	CF1325	10.00	10.00	CALL

CF Reducing Cross

2 CF Reducing Cross

Materials:

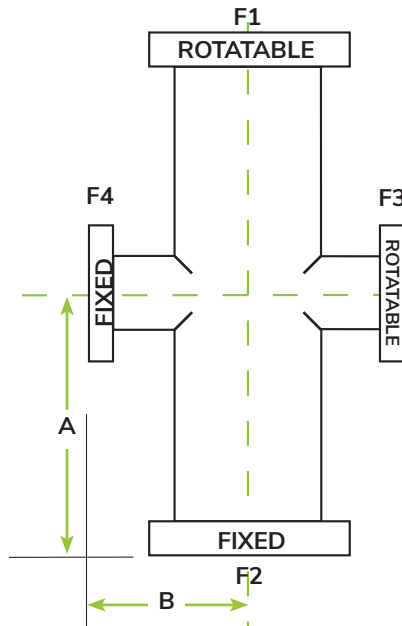
- 304L stainless steel

Product Notes:

- Pulled ports for optimum vacuum performance
- Reducing intersection for different CF flange sizes

Options: Call for price and availability

- Custom lengths
- Tapped flanges
- Custom flange combinations
- Alternative materials: 316L stainless steel, aluminum, etc.



PART #	REFERENCE ID	FLANGE 1 & 2		FLANGE 3 & 4		A (in)	B (in)	UNIT PRICE
		O.D.	TUBE O.D.	O.D.	TUBE O.D.			
5000533	CF275XCF133-150x075-R4X-2.46X1.88	2.72	1.50	1.33	0.75	2.46	1.88	\$222.00
5000534	CF275XCF212-150X100-R4X-2.46X2.30	2.72	1.50	2.12	1.00	2.46	2.30	\$232.00
5000535	CF338XCF133-200X075-R4X-3.23X2.13	3.37	2.00	1.33	0.75	3.23	2.13	\$345.00
5000536	CF338XCF275-200X150-R4X-3.23X2.71	3.37	2.00	2.72	1.50	3.23	2.71	\$345.00
5000537	CF450XCF275-250X150-R4X-3.38X2.96	4.47	2.50	2.72	1.50	3.38	2.96	\$360.00
5000538	CF450xCF338-150x075-R4X-3.38X3.48	4.47	2.50	3.37	2.00	3.38	3.48	\$407.00
5000539	CF462xCF338-150x075-R4X-3.63X3.73	4.62	3.00	3.37	2.00	3.63	3.73	\$532.00
5000540	CF462xCF450-150x075-R4X-3.63X3.63	4.62	3.00	4.47	2.50	3.63	3.63	\$532.00
5000541	CF600xCF275-150x075-R4X-3.71X4.32	5.97	4.00	2.72	1.50	4.32	3.71	\$532.00
5000542	CF600xCF338-150x075-R4X-4.23X4.32	5.97	4.00	3.37	2.00	4.32	4.23	\$625.00
5000543	CF600xCF450-150x075-R4X-4.13X4.32	5.97	4.00	4.47	2.50	4.32	4.13	\$675.00
5000544	CF600xCF462-150x075-R4X-4.13X4.32	5.97	4.00	4.62	3.00	4.32	4.13	\$773.00
5000545	CF675xCF600-150x075-R4X-4.71X4.82	6.75	5.00	5.97	4.00	4.71	4.82	CALL
5000546	CF800xCF275-150x075-R4X-4.71X5.50	7.97	6.00	2.72	1.50	5.50	4.71	\$890.00
5000547	CF800xCF338-150x075-R4X-5.23X5.50	7.97	6.00	3.37	2.00	5.50	5.23	CALL
5000548	CF800xCF450-150x075-R4X-5.13X5.50	7.97	6.00	4.47	2.50	5.50	5.13	\$1,020.00
5000549	CF800xCF600-150x075-R4X-5.32X5.50	7.97	6.00	5.97	4.00	5.50	5.32	\$1,215.00
5000550	CF1000xCF800-150x075-R4X-6.50X7.50	9.97	8.00	7.97	6.00	7.50	6.50	CALL

CF 5-Way Cross

Materials:

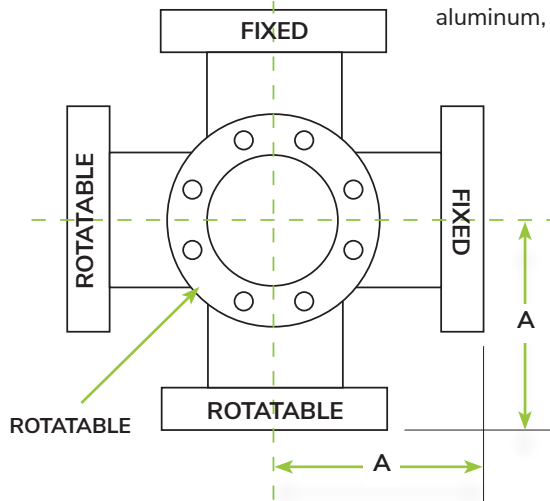
- 304L stainless steel

Product Notes:

- Pulled ports for optimum vacuum performance

Options: Call for price and availability

- Custom lengths
- Tapped flanges
- Custom flange combinations
- Alternative materials: 316L stainless steel, aluminum, etc.



2

CF 5-Way Cross

PART #	REFERENCE ID	FLANGE TYPE	TUBE O.D. (in)	A (in)	UNIT PRICE
5000551	CF133-075-5X-1.50	CF133	0.75	1.50	\$227.00
5000552	CF212-100-5X-2.05	CF212	1.00	2.05	\$270.00
5000553	CF275-150-5X-2.46	CF275	1.50	2.46	\$255.00
5000554	CF338-200-5X-3.22	CF338	2.00	3.23	\$665.00
5000555	CF450-250-5X-3.38	CF450	2.50	3.38	\$790.00
5000556	CF450-250-5X-4.12	CF450	2.50	4.13	\$790.00
5000557	CF462-300-5X-3.63	CF462	3.00	3.63	\$1,005.00
5000558	CF600-400-5X-4.32	CF600	4.00	4.32	\$1,250.00
5000559	CF600-400-5X-5.31	CF600	4.00	5.31	\$1,250.00
5000560	CF675-500-5X-4.71	CF675	5.00	4.71	CALL
5000561	CF800-600-5X-5.50	CF800	6.00	5.50	CALL
5000562	CF800-600-5X-6.56	CF800	6.00	6.56	CALL
5000563	CF1000-800-5X-7.50	CF1000	8.00	7.50	CALL
5000564	CF1325-1000-5X-10.00	CF1325	10.00	10.00	CALL

CF 6-Way Cross

2

CF 6-Way Cross

Materials:

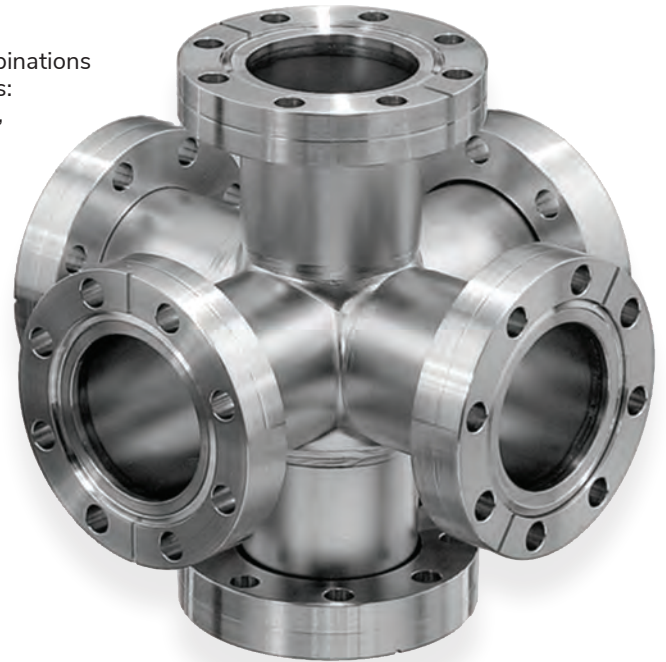
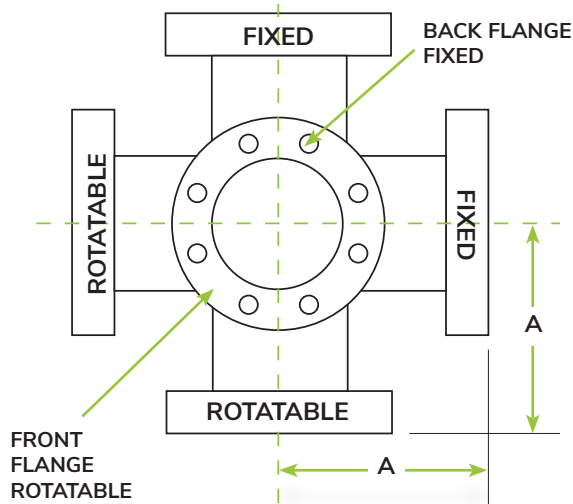
- 304L stainless steel

Product Notes:

- Pulled ports for optimum vacuum performance

Options: Call for price and availability

- Custom lengths
- Tapped flanges
- Custom flange combinations
- Alternative materials: 316L stainless steel, aluminum, etc.



PART #	REFERENCE ID	FLANGE TYPE	TUBE O.D. (in)	A (in)	UNIT PRICE
5000565	CF133-075-6X-1.50	CF133	0.75	1.50	\$320.00
5000566	CF212-100-6X-2.05	CF212	1.00	2.05	\$355.00
5000567	CF275-150-6X-2.46	CF275	1.50	2.46	\$330.00
5000568	CF338-200-6X-3.22	CF338	2.00	3.23	\$730.00
5000569	CF450-250-6X-3.38	CF450	2.50	3.38	\$960.00
5000570	CF450-250-6X-4.12	CF450	2.50	4.13	\$1,035.00
5000571	CF462-300-6X-3.63	CF462	3.00	3.63	\$1,215.00
5000572	CF600-400-6X-4.32	CF600	4.00	4.32	\$1,440.00
5000573	CF600-400-6X-5.31	CF600	4.00	5.31	\$1,465.00
5000574	CF675-500-6X-4.71	CF675	5.00	4.71	CALL
5000575	CF800-600-6X-5.50	CF800	6.00	5.50	CALL
5000576	CF800-600-6X-6.56	CF800	6.00	6.56	CALL
5000577	CF1000-800-6X-7.50	CF1000	8.00	7.50	CALL
5000578	CF1325-1000-6X-10.00	CF1325	10.00	10.00	CALL

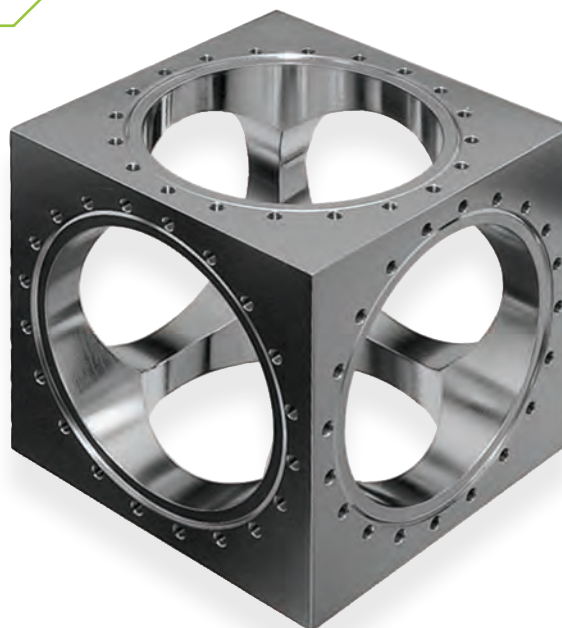
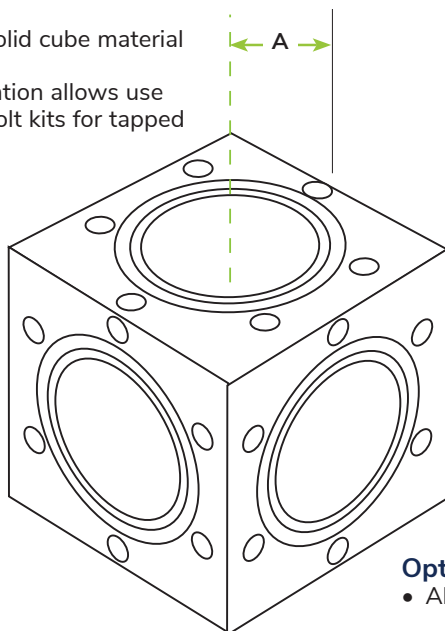
CF 6-Way Cube

Materials:

- 304L stainless steel

Product Notes:

- Machined from solid cube material – no welds
- Bolt holes orientation allows use of standard CF bolt kits for tapped bolt hole flanges



2
CF 6-Way Cube

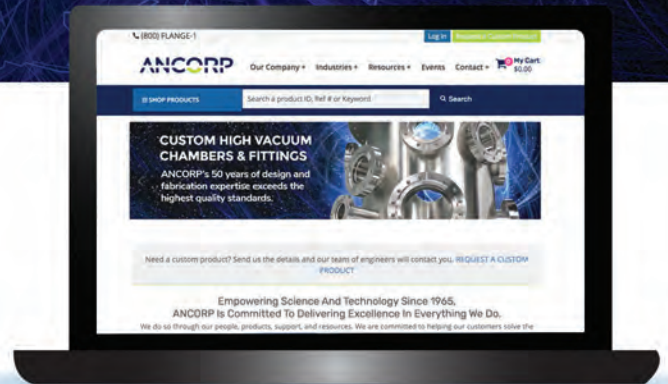
Options: Call for price and availability

- Alternative materials: 316L stainless steel, aluminum, etc.

PART #	REFERENCE ID	FLANGE SIZE	A (in)	UNIT PRICE
5000579	CF133-CU-0.67	1.34	0.67	\$585.00
5000580	CF275-CU-1.38	2.76	1.38	\$1,250.00
5000581	CF338-CU-1.685	3.37	1.68	\$1,600.00
5000582	CF450-CU-2.235	4.47	2.23	\$2,102.00
5000583	CF600-CU-2.985	5.97	2.98	\$2,775.00
5000584	CF800-CU-3.985	7.97	3.98	\$5,600.00
5000585	CF1000-CU-4.985	9.97	4.98	\$8,750.00

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ASA/ANSI Flanges & Fittings



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ASA/ANSI FLANGES & FITTINGS Introduction



3

ASA/ANSI Flanges & Fittings

Overview:

ASA/ANSI flanges provide a complete range of fittings to mount with tubing sized from 1 inch up to 12 inches in diameter. The flange system consists of two flanges, a sealing ring and bolt fasteners to compress the seal between the two flanges. A pair of ASA/ANSI flanges must have one grooved flange to accept the sealing ring and one smooth face flange onto which the seal will be made. To ease system assembly rotatable flanges are available for bolt hole alignment.

Background:

ANCORP's ASA/ANSI flanges and fittings are manufactured for compatibility with 150 lbs. ASA flanges and 150 ANSI flanges. The ASA/ANSI flange specification was originally created for use with steam pipes. Now adapted for vacuum use the system utilizes an elastomer seal and is capable of achieving high vacuum pressure levels.

All flanges offered by **ANCORP** are manufactured on state-of-the-art CNC (computer controlled) lathes to ensure consistency with dimensional tolerances, and extremely fine surface finishes. Water soluble, non-sulfur based coolants are used during the manufacturing process. The flanges are cleaned in an ultrasonic de-ionized water based cleaning system and vacuum packaged free from visible particulates and oils, ready for immediate use in any vacuum application.

Specifications:

- Vacuum rated to 1×10^{-8} Torr.
- Leak rating $< 1 \times 10^{-9}$ std. cc/s helium
- Temperature range: -20°C to 200°C
- Standard sizes: 5 inch to 16 inches O.D. (for tubing diameter 1 inch up to 12 inches)
- Materials:
 - Flanges and fittings: 304 stainless steel
 - Elastomer seals: Viton[®]

Features:

- Reusable flanges and seals
- Rotatable flanges for easier bolt hole alignment
- Adapters to other flange systems available
- Interchangeable with all other flanges and assemblies made to 150 lbs.
- ASA/ANSI standards

ASA/ANSI Standard Sealing Assemblies

3 ASA Flange System

The ASA/ANSI flange system provides a complete range of flanges to mount with tubing sized 1inch up to 12 inches diameter. The ASA/ANSI seal assembly consists of three types of sub-components, two flanges, a sealing O-ring and a bolt fastener kit to compress the seal between the two flanges.

ASA/ANSI flanges are available in two general styles: fixed and rotatable. Fixed flanges have a set bolt hole orientation while rotatable flanges have a two piece design allowing for bolt hole rotation to ease bolt alignment when mating the two flanges. The two pieces of the rotatable ASA/ANSI flange are called the insert and the housing (in which the bolt holes are machined). When installing these components the housing is placed behind the insert on the tubing prior to welding the insert to the tubing.

Both fixed and rotatable flanges are available with an o-ring groove. All ASA/ANSI sealing assemblies must include one smooth face ASA/ANSI flange and one grooved face flange. The sealing o-ring is placed into the groove prior to compressing the flanges together with a bolt kit. Flanges in this system are sized according to the nominal internal diameter for the tubing onto which they will be welded. When adding new flanges to an existing vacuum line, valve or chamber carefully compare all dimensions to be sure you are ordering a compatible flange. The most important dimensions to consider are the bolt circle diameter and the internal diameter of the flanges.

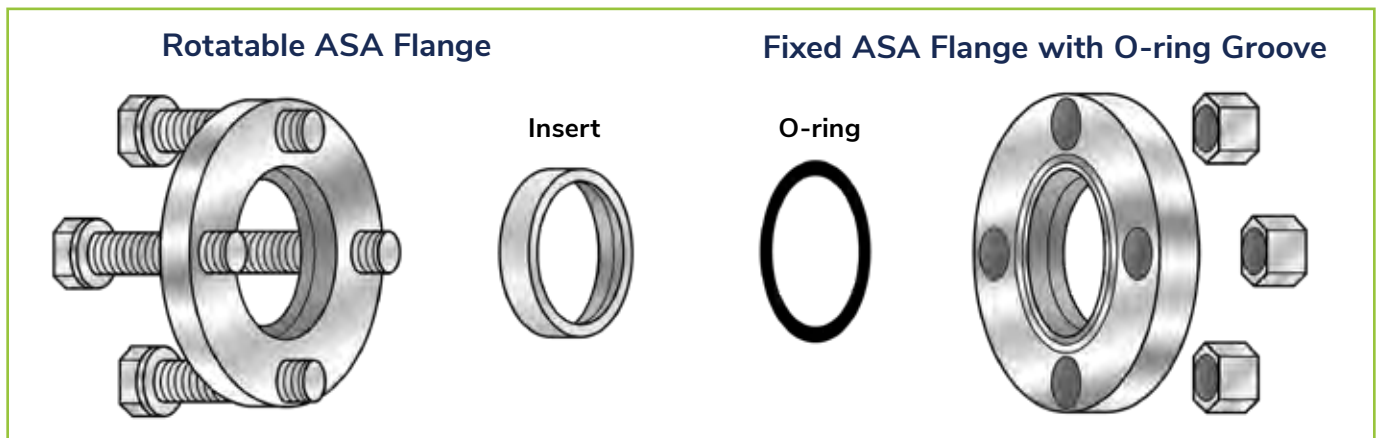
ASA/ANSI fluoroelastomer o-ring seals are capable of high vacuum pressures and temperatures as high

ASA/ANSI Conversion Chart

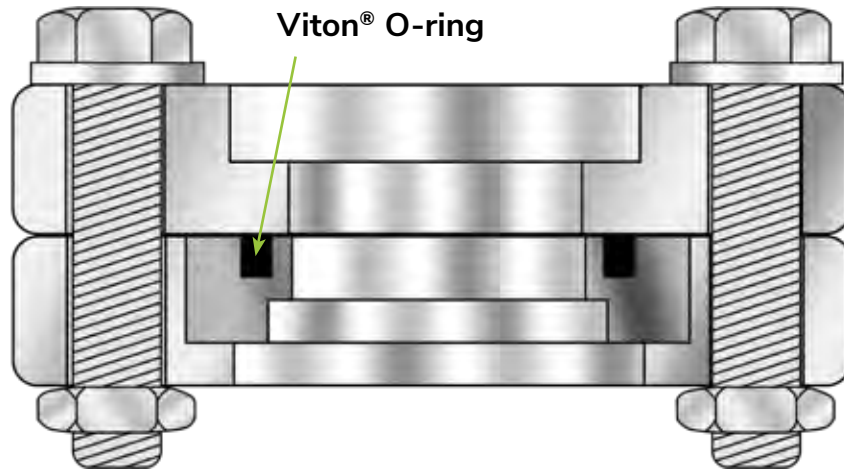
ANCORP PART #	ASA	ANSI
100ASA	4.25	1.0
150ASA	5.00	1.5
200ASA	6.00	2.0
300ASA	7.50	3.0
400ASA	9.00	4.0
600ASA	11.00	6.0
800ASA	13.50	8.0
1000ASA	16.00	10.0

as 200°C. The sealing ring is placed into the grooved flange and compressed against the smooth sealing face of the mating flange. Viton® gaskets are re-usable and can be used many times to make new vacuum tight seals.

ASA/ANSI fasteners are bolts, nuts and washers made of high tensile strength stainless steel. Bolts and nuts are offered with standard hex-head design.



ASA/ANSI Standard Sealing Assemblies



A sealing pair of ASA/ANSI flanges contains one flange with a smooth face and one flange with an o-ring groove machined into the surface. A Viton® sealing o-ring is placed into the groove of one of the flanges. The flanges compress the o-ring as the fastening bolts are tightened. The o-ring cold flows

under this pressure and fills microscopic surface imperfections on the sealing flange face creating a vacuum tight seal capable of withstanding temperature extremes from -20°C up to 200°C and pressures as low as 1×10^{-8} Torr.

ASA/ANSI Hardware

This elastomer sealed flange system uses bolt kits to fasten together your flanges and Viton® elastomer o-rings to create a seal.

The bolt kits fasten two flanges together that both have clearance bolt holes. The bolts slide easily through smooth bored bolt holes and are fastened with a nut and washer on the far side of the flange assembly. These bolt kits are offered in hex-head bolt, nut and washer kits.

The Viton® seals are a vacuum grade fluorocarbon elastomer o-rings that are compressed between the two ASA/ANSI flanges to create a seal capable of achieving high vacuum pressure. Viton® seals have a temperature



range of -20°C up to 150°C (200°C intermittent use) and may be re-used many times for re-installation of ASA/ANSI sealing assemblies.

Bolt Kits Fasteners

Materials:

- Hex-head bolt: stainless steel
- Hardware (nut and washer): stainless steel

PART #	REFERENCE ID	# of Bolts	BOLT SIZE (in)	UNIT PRICE
0606500	ASA100-HBK	4	9/16-12x1 1/2 in.	\$ 15.00
0606501	ASA150-HBK	4	9/16-12x1 1/2 in.	\$ 15.00
0606502	ASA200-HBK	4	5/8-11x1 1/2 in.	\$ 18.50
0606503	ASA300-HBK	4	5/8-11x1 1/2 in.	\$ 18.50
0606504	ASA400-HBK	8	5/8-11x1 1/2 in.	\$ 37.00
0606505	ASA600-HBK	8	3/4-10x2 1/4 in.	\$ 46.00
0606506	ASA800-HBK	8	3/4-10x2 1/4 in.	\$ 46.00
0606507	ASA1000-HBK	12	3/4-10x2 1/4 in.	\$ 69.00



Product Notes:

- For use with clearance bolt hole ASA/ANSI flanges

Viton® O-ring for ASA Flanges

PART #	REFERENCE ID	USE WITH	STD #	A (in)	B (in)	UNIT PRICE
0600225	2-225-OV	ASA100	2-225	0.120	1.875	\$ 3.50
0600230	2-230-OV	ASA150	2-230	0.120	2.500	\$ 4.50
0600238	2-238-OV	ASA200	2-238	0.120	3.500	\$ 7.00
0600247	2-247-OV	ASA300	2-247	0.120	4.625	\$ 8.00
0600258	2-258-OV	ASA400	2-258	0.120	6.000	\$ 10.00
0600266	2-266-OV	ASA600	2-266	0.120	8.000	\$ 12.50
0600274	2-274-OV	ASA800	2-274	0.120	10.000	\$ 15.50
0600278	2-278-OV	ASA1000	2-278	0.120	12.000	\$ 18.00

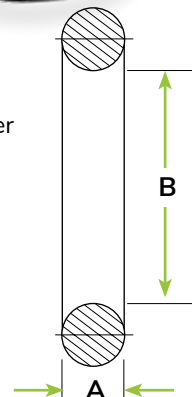


Materials:

- Fluorocarbon elastomer

Product Notes:

- Multi-use seal
- Temperature range: -70°C up to 150°C (intermittent use to 200°C)
- Pressure range: HV (approx. 1x10⁻⁸ Torr)



ASA/ANSI Flanges

Specifications:

- Vacuum rated to 1×10^{-8} Torr.
- Leak rating $< 1 \times 10^{-9}$ std. cc/s helium
- Temperature range: -20°C to 200°C
- Standard sizes: 5 inch to 16 inches O.D. (for tubing diameter 1 inch up to 12 inches)
- Materials:
 - Flanges and fittings: 304 stainless steel
 - Elastomer seals: Viton[®]

Features:

- Reusable flanges and seals
- Rotatable flanges for easier bolt hole alignment
- Adapters to other flange systems available
- Interchangeable with other ASA/ANSI style flanges made to industry standards



2 ASA Flange System

ANCORP manufactures flanges for our own use as we manufacture modular fittings (tee's, elbows and nipples) valves, feedthroughs, chambers and other components. We offer these same flanges for those customers that have in-house welding capabilities and desire to customize their system or components themselves.

All **ANCORP** ASA/ANSI flanges are manufactured to industry specifications to ensure compatibility with other manufacturer's flanges.

All ASA/ANSI sealing assemblies must include 1 smooth face ASA/ANSI flange and 1 grooved face flange- Fixed and rotatable flanges have clearance bolt holes. Clearance bolt holes allow for unrestricted passage of a bolt through the flanges. The bolt is then tightened with a nut on the back side of the flange assembly.

Standard ASA/ANSI weld flanges are manufactured of 304 stainless steel. Other materials are available on request.

ASA/ANSI Fixed Weld Flanges

These flanges are manufactured with a weld prep and tubing bore for immediate installation on your system with no additional alteration.

Fixed flanges have a set bolt hole orientation. Both fixed and rotatable flanges are available with an o-ring groove.



ASA/ANSI Rotatable Weld Flanges

These flanges are manufactured with a weld prep and tubing bore for immediate installation on your system with no additional alteration.

Rotatable flanges have a two piece design allowing for bolt hole rotation to ease bolt alignment when mating the two flanges.

Both fixed and rotatable flanges are available with an o-ring groove.



ASA/ANSI Fixed Blank Flanges

These flanges are manufactured with no weld prep and no tubing bore. Blank flanges are commonly used to close unused ports or they are altered by customers with their own custom machining capability for a special use.

Fixed flanges have a set bolt hole orientation.

Both fixed and rotatable flanges are available with an o-ring groove.



ASA/ANSI Rotatable Blank Flanges

These flanges are manufactured with no weld prep and no tubing bore. Blank flanges are commonly used to close unused ports or they are altered by customers with their own custom machining capability for a special use.

Rotatable flanges have a two piece design allowing for bolt hole rotation to ease bolt alignment when mating the two flanges.

Both fixed and rotatable flanges are available with an o-ring groove.



3 ASA Flange System

100 ASA - 4.25 inch O.D.



3
100 ASA Flanges

Product Features:

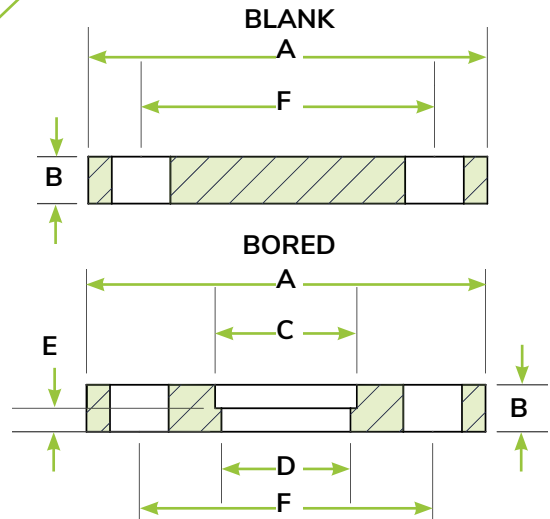
- Designed to fit standard inch tubing O.D.'s
- Self-aligning
- Internal weld
- Rotatable flanges for easier bolt hole alignment
- Blank flanges to close unused ports or custom modify
- Interchangeable with other ASA/ANSI style flanges

Product Specifications:

- Pressure range: HV (approx. 1×10^{-8} Torr)
- Temperature range: -20°C up to 200°C
- Standard materials: 304 grade stainless steel

Options: Call for price and availability

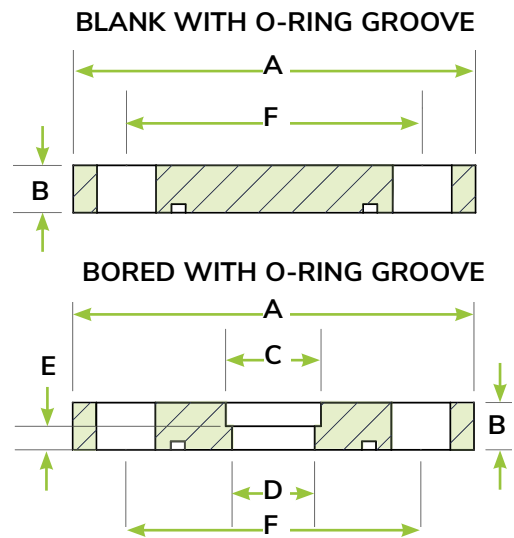
100 ASA - Fixed Flanges



PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	# of Bolts	HOLE SIZE (in)	UNIT PRICE
6000000	ASA100-000	4.25	0.500	Blank	-	-	3.125	4	0.625	\$ 64.00
6000001	ASA100-100	4.25	0.500	1.010	.875	.250	3.125	4	0.625	\$ 69.00
6000002	ASA100-150	4.25	0.500	1.510	1.375	.250	3.125	4	0.625	\$ 69.00

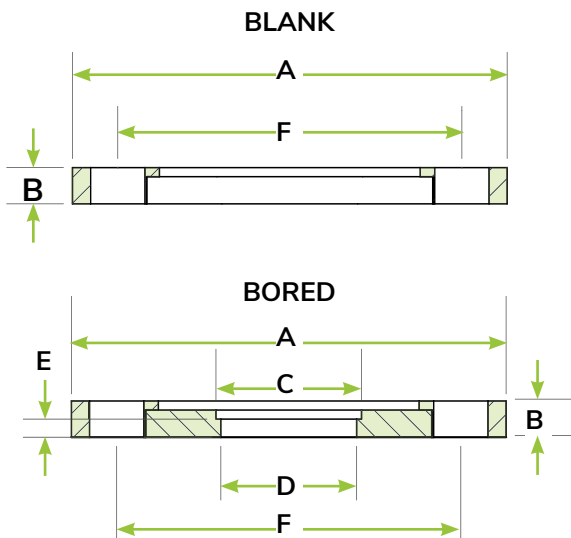
100 ASA - Fixed, Grooved Flanges

3
100 ASA Flanges



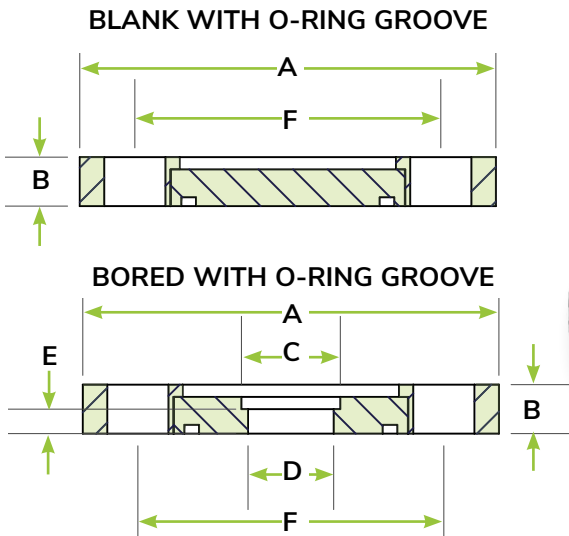
PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	# of Bolts	HOLE SIZE (in)	UNIT PRICE
6000028	ASA100G-000	4.25	0.500	Blank	-	-	3.125	4	0.625	\$ 87.00
6000029	ASA100G-100	4.25	0.500	1.010	.875	.250	3.125	4	0.625	\$ 92.00
6000030	ASA100G-150	4.25	0.500	1.510	1.375	.250	3.125	4	0.625	\$ 92.00

100 ASA - Rotatable Flanges



PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	# of Bolts	HOLE SIZE (in)	UNIT PRICE
6000056	ASA100R-000	4.25	0.500	Blank	-	-	3.125	4	0.625	\$ 110.00
6000057	ASA100R-100	4.25	0.500	1.010	.875	.250	3.125	4	0.625	\$ 125.00
6000058	ASA100R-150	4.25	0.500	1.510	1.375	.250	3.125	4	0.625	\$ 125.00

100 ASA - Rotatable, Grooved Flanges



3

100 ASA Flanges

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	# of Bolts	HOLE SIZE (in)	UNIT PRICE
6000084	ASA100RG-000	4.25	0.500	Blank	-	-	3.125	4	0.625	\$ 135.00
6000085	ASA100RG-100	4.25	0.500	1.010	.875	.250	3.125	4	0.625	\$ 145.00
6000086	ASA100RG-150	4.25	0.500	1.510	1.375	.250	3.125	4	0.625	\$ 145.00

100 ASA Hardware

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
0600225	2-225-OV	ASA100 (1) Viton® O-ring	\$ 3.50
0606500	ASA100-HBK	ASA100 (4) Bolt, Nut & Washer Kit; 9/16-12x1 1/2 in.	\$ 15.00



150 ASA - 5.00 inch O.D.

3
150 ASA Flanges



Product Features:

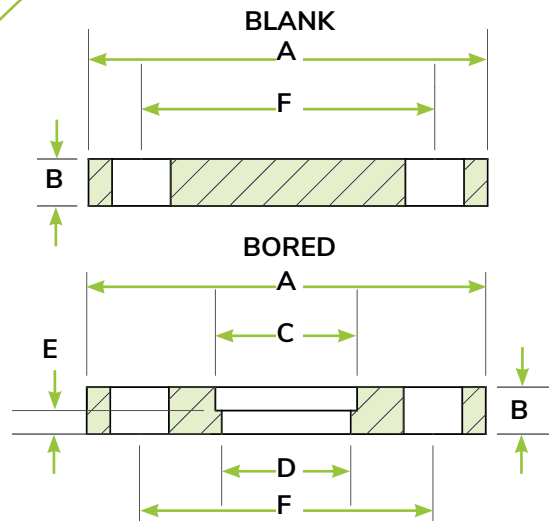
- Designed to fit standard inch tubing O.D.'s
- Self-aligning
- Internal weld
- Rotatable flanges for easier bolt hole alignment
- Blank flanges to close unused ports or custom modify
- Interchangeable with other ASA/ANSI style flanges

Product Specifications:

- Pressure range: HV (approx. 1×10^{-8} Torr)
- Temperature range: -20°C up to 200°C
- Standard materials: 304 grade stainless steel

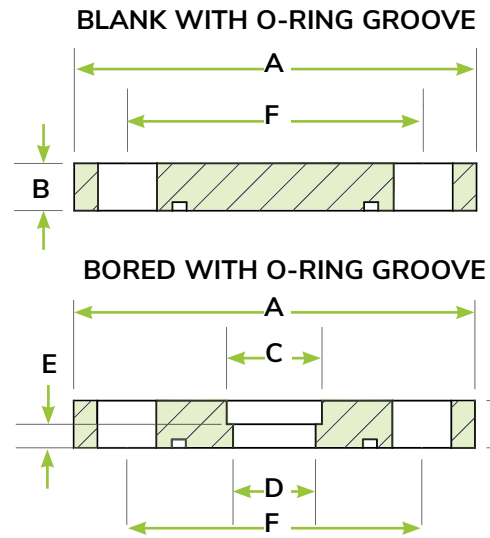
Options: Call for price and availability

150 ASA - Fixed Flanges



PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	# of Bolts	HOLE SIZE (in)	UNIT PRICE
6000003	ASA150-000	5.00	0.500	Blank	-	-	3.880	4	0.625	\$ 87.00
6000004	ASA150-150	5.00	0.500	1.510	1.375	0.250	3.880	4	0.625	\$ 98.00
6000005	ASA150-200	5.00	0.500	2.010	1.875	0.250	3.880	4	0.625	\$ 98.00
6000006	ASA150-250	5.00	0.500	2.510	2.375	0.250	3.880	4	0.625	\$ 98.00

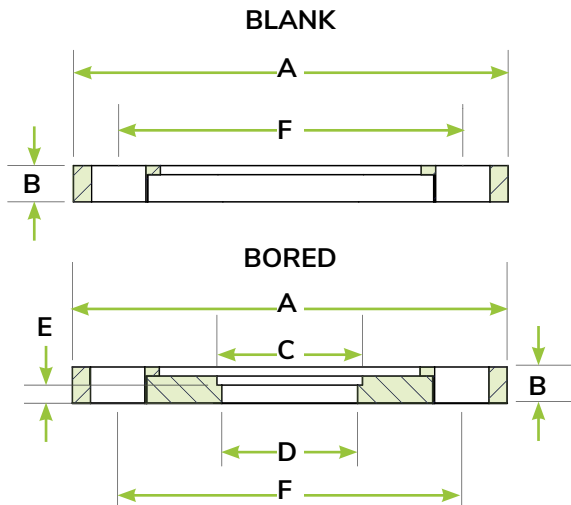
150 ASA - Fixed, Grooved Flanges



3
150 ASA Flanges

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	# of Bolts	HOLE SIZE (in)	UNIT PRICE
6000031	ASA150G-000	5.00	0.500	Blank	-	-	3.880	4	0.625	\$ 110.00
6000032	ASA150G-150	5.00	0.500	1.510	1.375	0.250	3.880	4	0.625	\$ 125.00
6000033	ASA150G-200	5.00	0.500	2.010	1.875	0.250	3.880	4	0.625	\$ 125.00
6000034	ASA150G-250	5.00	0.500	2.510	2.375	0.250	3.880	4	0.625	\$ 125.00

150 ASA - Rotatable Flanges

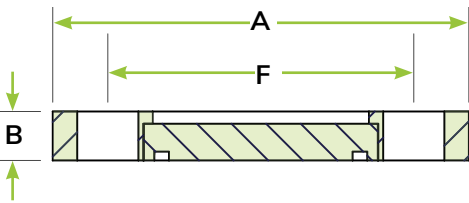


PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	# of Bolts	HOLE SIZE (in)	UNIT PRICE
6000059	ASA150R-000	5.00	0.500	Blank	-	-	3.880	4	0.625	\$ 140.00
6000060	ASA150R-150	5.00	0.500	1.510	1.375	0.250	3.880	4	0.625	\$ 150.00
6000061	ASA150R-200	5.00	0.500	2.010	1.875	0.250	3.880	4	0.625	\$ 150.00
6000062	ASA150R-250	5.00	0.500	2.510	2.375	0.250	3.880	4	0.625	\$ 150.00

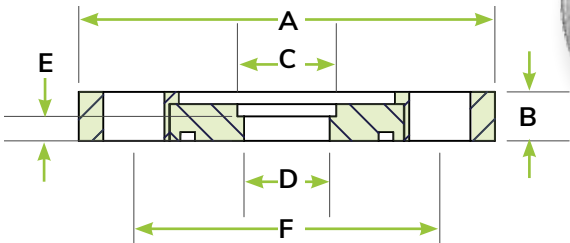
150 ASA - Rotatable, Grooved Flanges

150 ASA Flanges

BLANK WITH O-RING GROOVE



BORED WITH O-RING GROOVE



PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	# of Bolts	HOLE SIZE (in)	UNIT PRICE
6000087	ASA150RG-000	5.00	0.500	Blank	-	-	3.880	4	0.625	\$ 165.00
6000088	ASA150RG-150	5.00	0.500	1.510	1.375	0.250	3.880	4	0.625	\$ 175.00
6000089	ASA150RG-200	5.00	0.500	2.010	1.875	0.250	3.880	4	0.625	\$ 175.00
6000090	ASA150RG-250	5.00	0.500	2.510	2.375	0.250	3.880	4	0.625	\$ 175.00

150 ASA Hardware

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
0600230	2-230-OV	ASA150 (1) Viton® O-ring	\$ 4.50
0606501	ASA150-HBK	ASA150 (4) Bolt, Nut & Washer Kit; 9/16-12x1 1/2 in.	\$ 15.00



200 ASA - 6.00 inch O.D.



200 ASA Flanges

Product Features:

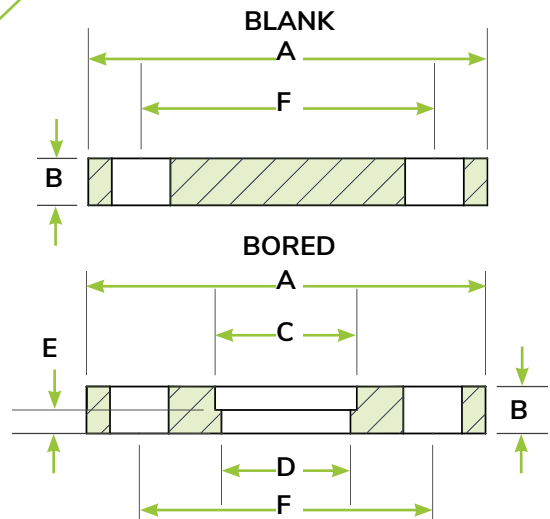
- Designed to fit standard inch tubing O.D.'s
- Self-aligning
- Internal weld
- Rotatable flanges for easier bolt hole alignment
- Blank flanges to close unused ports or custom modify
- Interchangeable with other ASA/ANSI style flanges

Product Specifications:

- Pressure range: HV (approx. 1×10^{-8} Torr)
- Temperature range: -20°C up to 200°C
- Standard materials: 304 grade stainless steel

Options: Call for price and availability

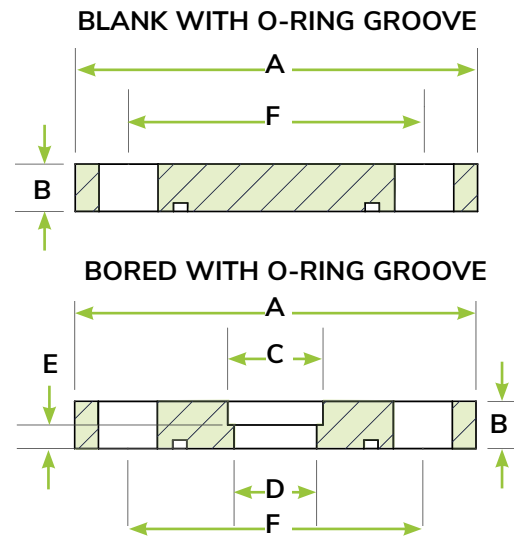
200 ASA - Fixed Flanges



PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	# of Bolts	HOLE SIZE (in)	UNIT PRICE
6000007	ASA200-000	6.00	0.500	Blank	-	-	4.750	4	0.750	\$ 105.00
6000008	ASA200-200	6.00	0.500	2.010	1.875	0.250	4.750	4	0.750	\$ 115.00
6000009	ASA200-250	6.00	0.500	2.510	2.375	0.250	4.750	4	0.750	\$ 115.00
6000010	ASA200-300	6.00	0.500	3.010	2.938	0.250	4.750	4	0.750	\$ 115.00
6000011	ASA200-350	6.00	0.500	3.510	3.438	0.250	4.750	4	0.750	\$ 115.00

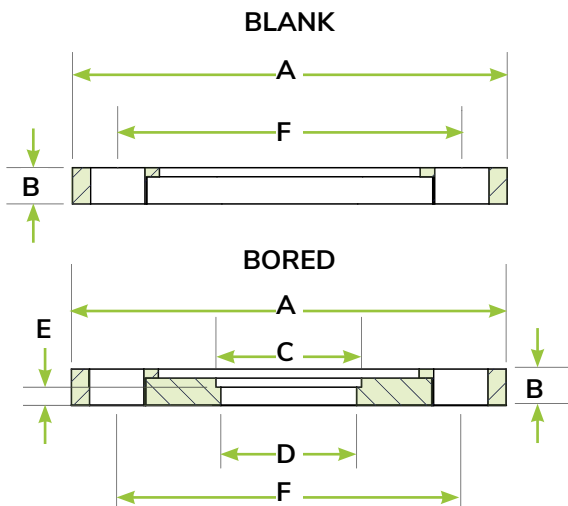
200 ASA - Fixed, Grooved Flanges

200 ASA Flanges



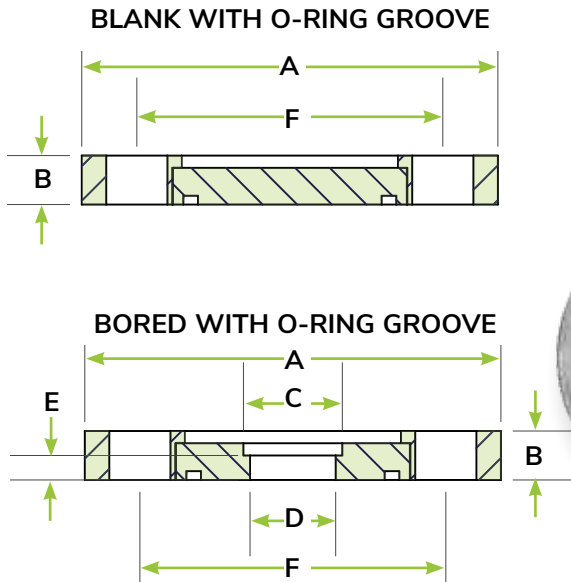
PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	# of Bolts	HOLE SIZE (in)	UNIT PRICE
6000035	ASA200G-000	6.00	0.500	Blank	-	-	4.750	4	0.750	\$ 130.00
6000036	ASA200G-200	6.00	0.500	2.010	1.875	0.250	4.750	4	0.750	\$ 140.00
6000037	ASA200G-250	6.00	0.500	2.510	2.375	0.250	4.750	4	0.750	\$ 140.00
6000038	ASA200G-300	6.00	0.500	3.010	2.938	0.250	4.750	4	0.750	\$ 140.00
6000039	ASA200G-350	6.00	0.500	3.510	3.438	0.250	4.750	4	0.750	\$ 140.00

200 ASA - Rotatable Flanges



PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	# of Bolts	HOLE SIZE (in)	UNIT PRICE
6000063	ASA200R-000	6.00	0.500	Blank	-	-	4.750	4	0.750	\$ 190.00
6000064	ASA200R-200	6.00	0.500	2.010	1.875	0.250	4.750	4	0.750	\$ 200.00
6000065	ASA200R-250	6.00	0.500	2.510	2.375	0.250	4.750	4	0.750	\$ 200.00
6000066	ASA200R-300	6.00	0.500	3.010	2.938	0.250	4.750	4	0.750	\$ 200.00
6000067	ASA200R-350	6.00	0.500	3.510	3.438	0.250	4.750	4	0.750	\$ 200.00

200 ASA - Rotatable, Grooved Flanges



3

200 ASA Flanges

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	# of Bolts	HOLE SIZE (in)	UNIT PRICE
6000091	ASA200RG-000	6.00	0.500	Blank	-	-	4.750	4	0.750	\$ 215.00
6000092	ASA200RG-200	6.00	0.500	2.010	1.875	0.250	4.750	4	0.750	\$ 220.00
6000093	ASA200RG-250	6.00	0.500	2.510	2.375	0.250	4.750	4	0.750	\$ 220.00
6000094	ASA200RG-300	6.00	0.500	3.010	2.938	0.250	4.750	4	0.750	\$ 220.00
6000095	ASA200RG-350	6.00	0.500	3.510	3.438	0.250	4.750	4	0.750	\$ 220.00

200 ASA Hardware

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
0600238	2-238-OV	ASA200 (1) Viton® O-ring	\$ 7.00
0606502	ASA200-HBK	ASA200 (4) Bolt, Nut & Washer Kit; 9/16-12x1 1/2 in.	\$ 18.50



300 ASA - 7.50 inch O.D.

300 ASA Flanges



Product Features:

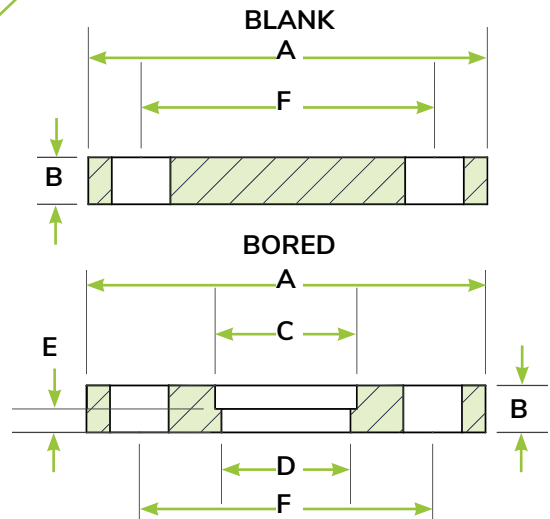
- Designed to fit standard inch tubing O.D.'s
- Self-aligning
- Internal weld
- Rotatable flanges for easier bolt hole alignment
- Blank flanges to close unused ports or custom modify
- Interchangeable with other ASA/ANSI style flanges

Product Specifications:

- Pressure range: HV (approx. 1×10^{-8} Torr)
- Temperature range: -20°C up to 200°C
- Standard materials: 304 grade stainless steel

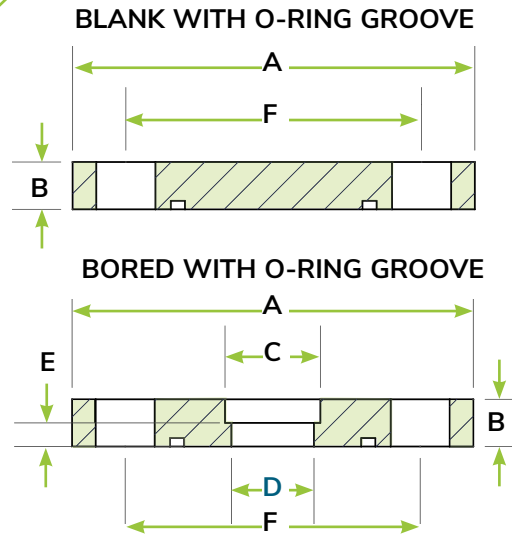
Options: Call for price and availability

300 ASA - Fixed Flanges



PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	# of Bolts	HOLE SIZE (in)	UNIT PRICE
6000012	ASA300-000	7.50	0.500	Blank	-	-	6.000	4	0.750	\$ 130.00
6000013	ASA300-300	7.50	0.500	3.010	2.938	0.250	6.000	4	0.750	\$ 145.00
6000014	ASA300-350	7.50	0.500	3.510	3.438	0.250	6.000	4	0.750	\$ 145.00
6000015	ASA300-400	7.50	0.500	4.010	3.910	0.250	6.000	4	0.750	\$ 145.00

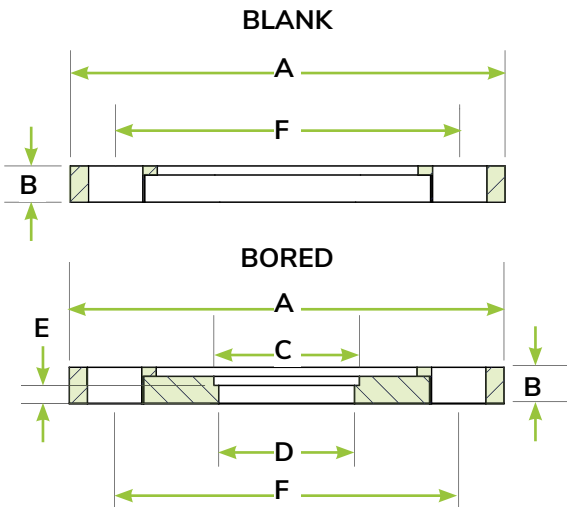
300 ASA - Fixed, Grooved Flanges



3 300 ASA Flanges

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	# of Bolts	HOLE SIZE (in)	UNIT PRICE
6000040	ASA300G-000	7.50	0.500	Blank	-	-	6.000	4	0.750	\$ 170.00
6000041	ASA300G-300	7.50	0.500	3.010	2.938	0.250	6.000	4	0.750	\$ 185.00
6000042	ASA300G-350	7.50	0.500	3.510	3.438	0.250	6.000	4	0.750	\$ 185.00
6000043	ASA300G-400	7.50	0.500	4.010	3.910	0.250	6.000	4	0.750	\$ 185.00

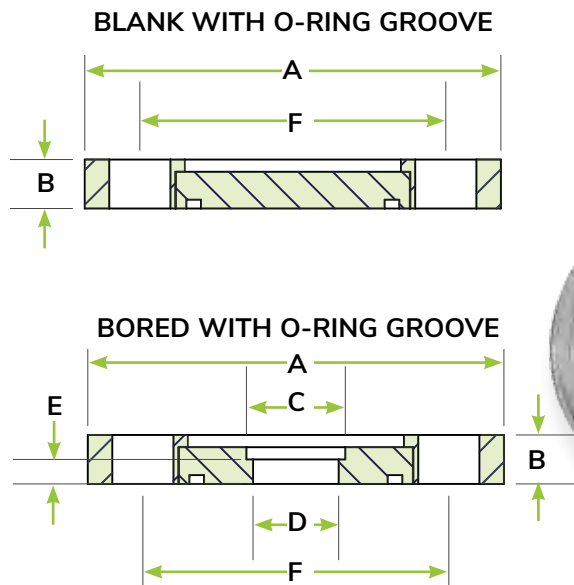
300 ASA - Rotatable Flanges



PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	# of Bolts	HOLE SIZE (in)	UNIT PRICE
6000068	ASA300R-000	7.50	0.500	Blank	-	-	6.000	4	0.750	\$ 220.00
6000069	ASA300R-300	7.50	0.500	3.010	2.938	0.250	6.000	4	0.750	\$ 240.00
6000070	ASA300R-350	7.50	0.500	3.510	3.438	0.250	6.000	4	0.750	\$ 240.00
6000071	ASA300R-400	7.50	0.500	4.010	3.910	0.250	6.000	4	0.750	\$ 240.00

300 ASA - Rotatable, Grooved Flanges

300 ASA Flanges



PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	# of Bolts	HOLE SIZE (in)	UNIT PRICE
6000096	ASA300RG-000	7.50	0.500	Blank	-	-	6.000	4	0.750	\$ 260.00
6000097	ASA300RG-300	7.50	0.500	3.010	2.938	0.250	6.000	4	0.750	\$ 280.00
6000098	ASA300RG-350	7.50	0.500	3.510	3.438	0.250	6.000	4	0.750	\$ 280.00
6000099	ASA300RG-400	7.50	0.500	4.010	3.910	0.250	6.000	4	0.750	\$ 280.00

300 ASA Hardware

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
0600247	2-247-OV	ASA300 (1) Viton® O-ring	\$ 8.00
0606503	ASA300-HBK	ASA300 (4) Bolt, Nut & Washer Kit; 5/8-11x1 1/2 in.	\$ 18.50



400 ASA - 9.00 inch O.D.



Product Features:

- Designed to fit standard inch tubing O.D.'s
- Self-aligning
- Internal weld
- Rotatable flanges for easier bolt hole alignment
- Blank flanges to close unused ports or custom modify
- Interchangeable with other ASA/ANSI style flanges

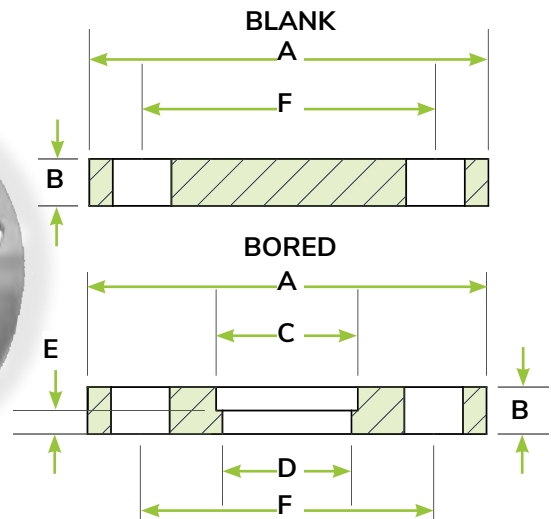
Product Specifications:

- Pressure range: HV (approx. 1×10^{-8} Torr)
- Temperature range: -20°C up to 200°C
- Standard materials: 304 grade stainless steel

Options: Call for price and availability

3
400 ASA Flanges

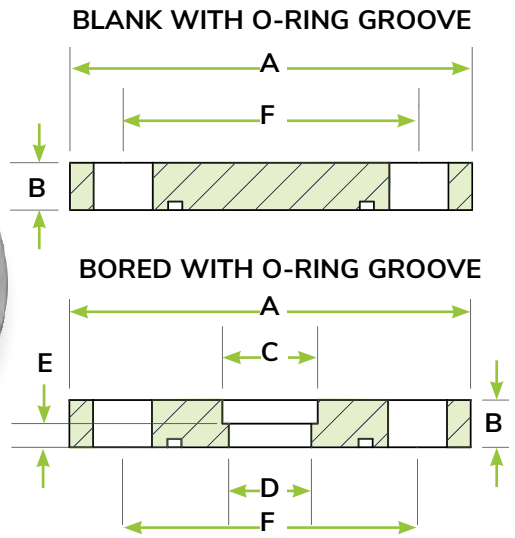
400 ASA - Fixed Flanges



PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	# of Bolts	HOLE SIZE (in)	UNIT PRICE
6000016	ASA400-000	9.00	0.500	Blank	-	-	7.500	8	0.750	\$ 160.00
6000017	ASA400-400	9.00	0.500	4.010	3.910	0.250	7.500	8	0.750	\$ 170.00
6000018	ASA400-600	9.00	0.500	6.020	5.875	0.250	7.500	8	0.750	\$ 170.00

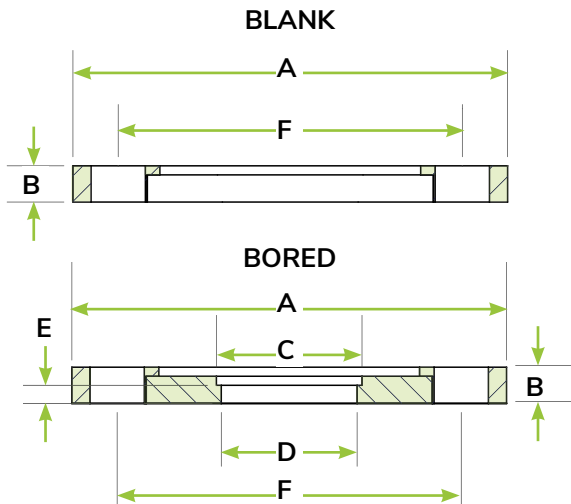
400 ASA - Fixed, Grooved Flanges

3
400 ASA Flanges



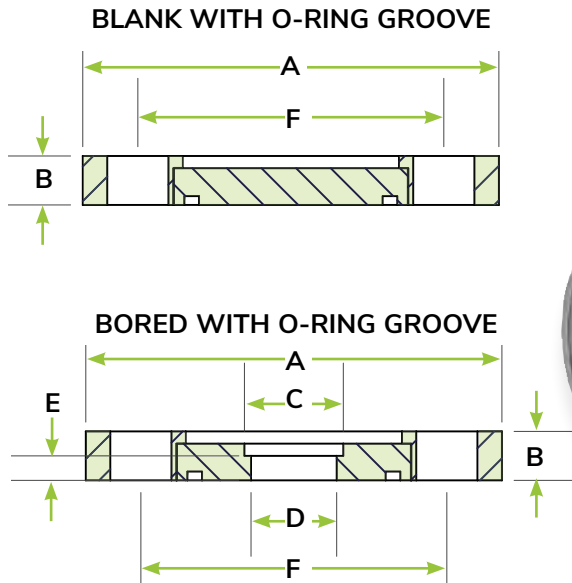
PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	# of Bolts	HOLE SIZE (in)	UNIT PRICE
6000044	ASA400G-000	9.00	0.500	Blank	-	-	7.500	8	0.750	\$ 200.00
6000045	ASA400G-400	9.00	0.500	4.010	3.910	0.250	7.500	8	0.750	\$ 200.00
6000046	ASA400G-600	9.00	0.500	6.020	5.875	0.250	7.500	8	0.750	\$ 210.00

400 ASA - Rotatable Flanges



PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	# of Bolts	HOLE SIZE (in)	UNIT PRICE
6000072	ASA400R-000	9.00	0.500	Blank	-	-	7.500	8	0.750	\$ 250.00
6000073	ASA400R-400	9.00	0.500	4.010	3.910	0.250	7.500	8	0.750	\$ 260.00
6000074	ASA400R-600	9.00	0.500	6.020	5.875	0.250	7.500	8	0.750	\$ 260.00

400 ASA - Rotatable, Grooved Flanges



3 400 ASA Flanges

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	# of Bolts	HOLE SIZE (in)	UNIT PRICE
6000100	ASA400RG-000	9.00	0.500	Blank	-	-	7.500	8	0.750	\$ 290.00
6000101	ASA400RG-400	9.00	0.500	4.010	3.910	0.250	7.500	8	0.750	\$ 300.00
6000102	ASA400RG-600	9.00	0.500	6.020	5.875	0.250	7.500	8	0.750	\$ 300.00

400 ASA Hardware

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
0600258	2-258-OV	ASA400 (1) Viton® O-ring	\$ 10.00
0606504	ASA400-HBK	ASA400 (8) Bolt, Nut & Washer Kit; 5/8-11x1 1/2 in.	\$ 37.00



600 ASA - 11.00 inch O.D.



Product Features:

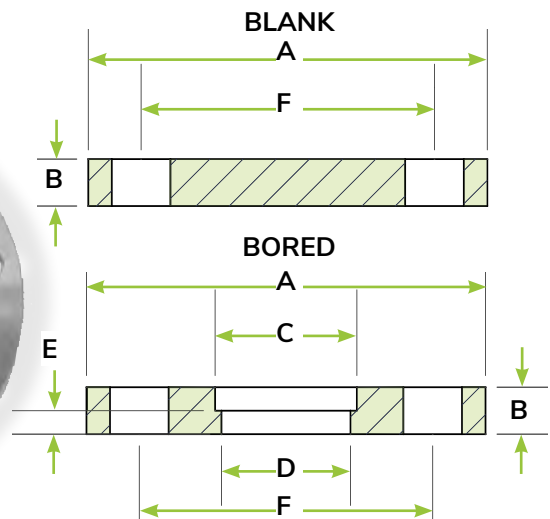
- Designed to fit standard inch tubing O.D.'s
- Self-aligning
- Internal weld
- Rotatable flanges for easier bolt hole alignment
- Blank flanges to close unused ports or custom modify
- Interchangeable with other ASA/ANSI style flanges

Product Specifications:

- Pressure range: HV (approx. 1×10^{-8} Torr)
- Temperature range: -20°C up to 200°C
- Standard materials: 304 grade stainless steel

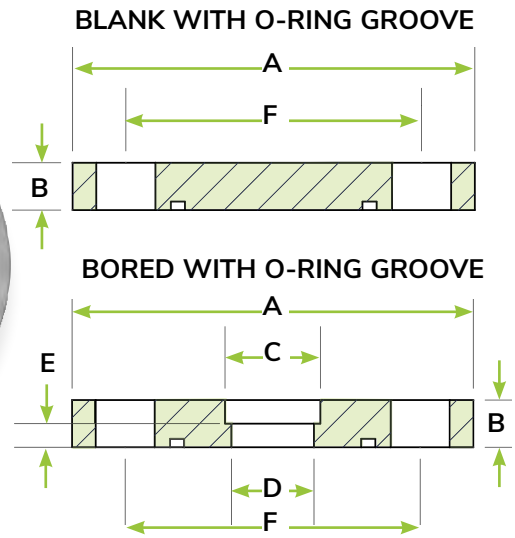
Options: Call for price and availability

600 ASA - Fixed Flanges



PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	# of Bolts	HOLE SIZE (in)	UNIT PRICE
6000019	ASA600-000	11.00	0.750	Blank	-	-	9.500	8	0.812	\$ 255.00
6000020	ASA600-600	11.00	0.750	6.020	5.875	0.375	9.500	8	0.812	\$ 290.00
6000021	ASA600-800	11.00	0.750	8.020	7.875	0.375	9.500	8	0.812	\$ 290.00

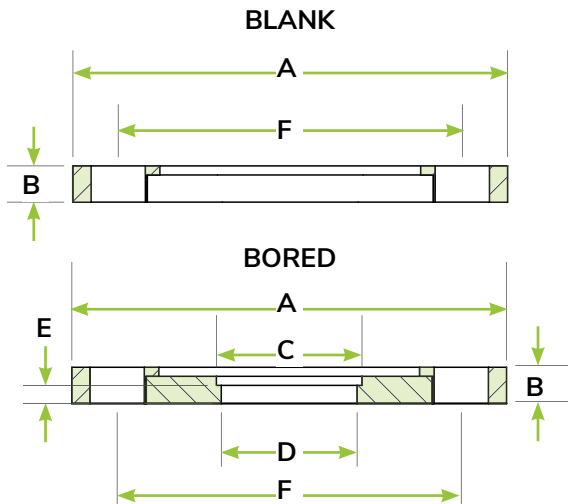
600 ASA - Fixed, Grooved Flanges



3
600 ASA Flanges

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	# of Bolts	HOLE SIZE (in)	UNIT PRICE
6000047	ASA600G-000	11.00	0.750	Blank	-	-	9.500	8	0.812	\$ 315.00
6000048	ASA600G-600	11.00	0.750	6.020	5.875	0.375	9.500	8	0.812	\$ 345.00
6000049	ASA600G-800	11.00	0.750	8.020	7.875	0.375	9.500	8	0.812	\$ 345.00

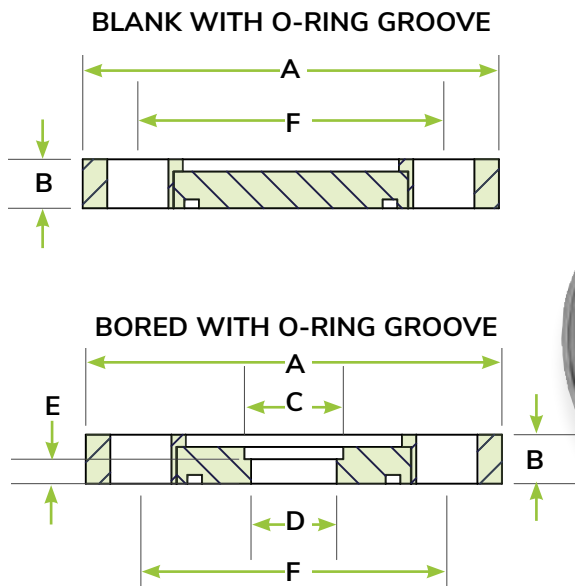
600 ASA - Rotatable Flanges



PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	# of Bolts	HOLE SIZE (in)	UNIT PRICE
6000075	ASA600R-000	11.00	0.750	Blank	-	-	9.500	8	0.812	\$ 390.00
6000076	ASA600R-600	11.00	0.750	6.020	5.875	0.375	9.500	8	0.812	\$ 420.00
6000077	ASA600R-800	11.00	0.750	8.020	7.875	0.375	9.500	8	0.812	\$ 420.00

600 ASA - Rotatable, Grooved Flanges

3
600 ASA Flanges



PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	# of Bolts	HOLE SIZE (in)	UNIT PRICE
6000103	ASA600RG-000	11.00	0.750	Blank	-	-	Bolt Circle	8	0.812	\$ 445.00
6000104	ASA600RG-600	11.00	0.750	6.020	5.875	0.375	Bolt Circle	8	0.812	\$ 470.00
6000105	ASA600RG-800	11.00	0.750	8.020	7.875	0.375	Bolt Circle	8	0.812	\$ 470.00

600 ASA Hardware

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
0600266	2-266-OV	ASA600 (1) Viton® O-ring	\$ 12.50
0606505	ASA600-HBK	ASA600 (8) Bolt, Nut & Washer Kit; 3/4-10x2 1/4 in.	\$ 46.00



800 ASA - 13.50 inch O.D.



Product Features:

- Designed to fit standard inch tubing O.D.'s
- Self-aligning
- Internal weld
- Rotatable flanges for easier bolt hole alignment
- Blank flanges to close unused ports or custom modify
- Interchangeable with other ASA/ANSI style flanges

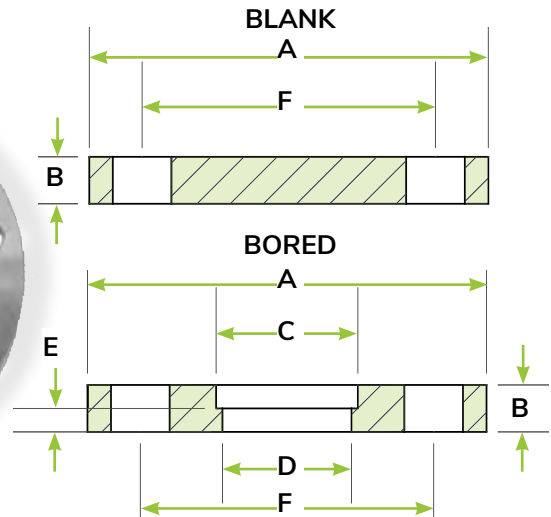
Product Specifications:

- Pressure range: HV (approx. 1×10^{-8} Torr)
- Temperature range: -20°C up to 200°C
- Standard materials: 304 grade stainless steel

Options: Call for price and availability

3
800 ASA Flanges

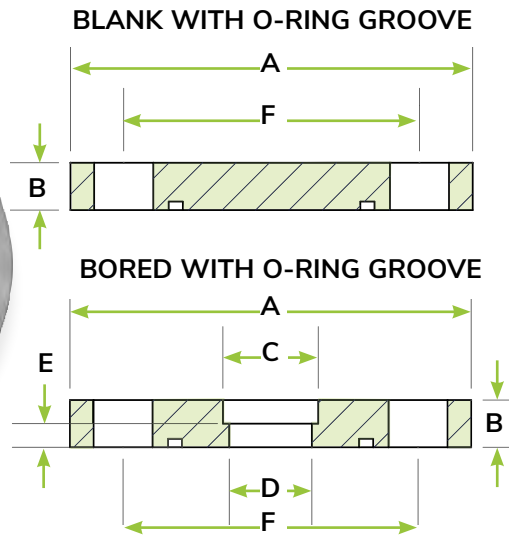
800 ASA - Fixed Flanges



PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	# of Bolts	HOLE SIZE (in)	UNIT PRICE
6000022	ASA800-000	13.50	0.750	-	-	-	11.750	8	0.812	\$ 340.00
6000023	ASA800-800	13.50	0.750	8.020	7.875	0.375	11.750	8	0.812	\$ 375.00
6000024	ASA800-1000	13.50	0.750	10.020	9.875	0.375	11.750	8	0.812	\$ 375.00

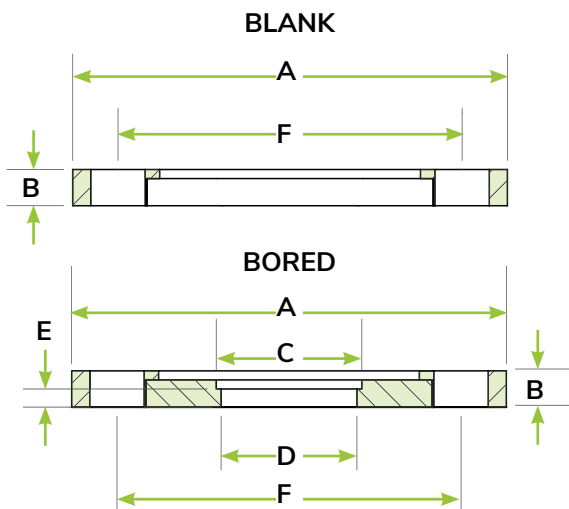
800 ASA - Fixed, Grooved Flanges

3
800 ASA Flanges



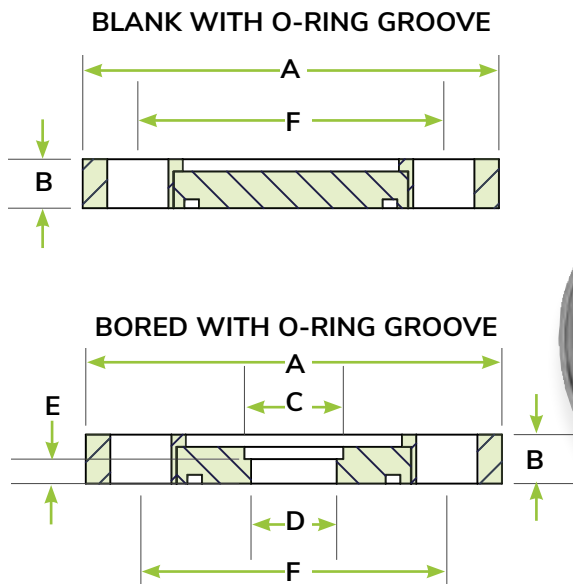
PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	# of Bolts	HOLE SIZE (in)	UNIT PRICE
6000050	ASA800G-000	13.50	0.750	Blank	-	-	11.750	8	0.812	\$ 405.00
6000051	ASA800G-800	13.50	0.750	8.020	7.875	0.375	11.750	8	0.812	\$ 440.00
6000052	ASA800G-1000	13.50	0.750	10.020	9.875	0.375	11.750	8	0.812	\$ 440.00

800 ASA - Rotatable Flanges



PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	# of Bolts	HOLE SIZE (in)	UNIT PRICE
6000078	ASA800R-000	13.50	0.750	Blank	-	-	11.750	8	0.812	\$ 475.00
6000079	ASA800R-800	13.50	0.750	8.020	7.875	0.375	11.750	8	0.812	\$ 510.00
6000080	ASA800R-1000	13.50	0.750	10.020	9.875	0.375	11.750	8	0.812	\$ 510.00

800 ASA - Rotatable, Grooved Flanges



3 800 ASA Flanges

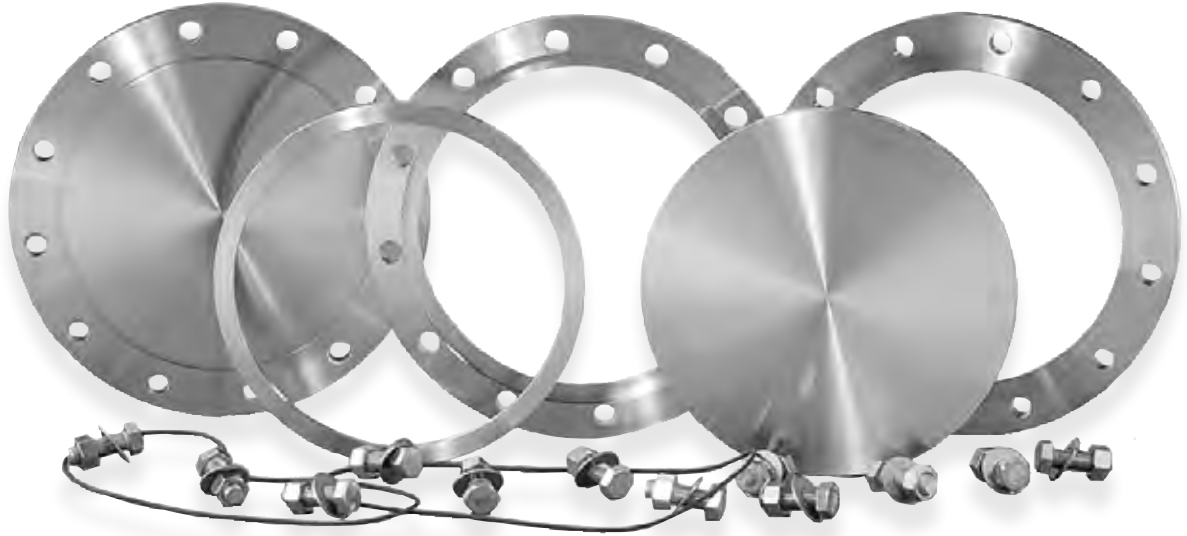
PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	# of Bolts	HOLE SIZE (in)	UNIT PRICE
6000106	ASA800RG-000	13.50	0.750	Blank	-	-	11.750	8	0.812	\$ 535.00
6000107	ASA800RG-800	13.50	0.750	8.020	7.875	0.375	11.750	8	0.812	\$ 570.00
6000108	ASA800RG-1000	13.50	0.750	10.02	9.875	0.375	11.750	8	0.812	\$ 570.00

800 ASA Hardware

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
0600274	2-274-OV	ASA800 (1) Viton® O-ring	\$ 15.50
0606506	ASA800-HBK	ASA800 (8) Bolt, Nut & Washer Kit; 3/4-10x2 1/4 in.	\$ 46.00



1000 ASA - 16.00 inch O.D.



Product Features:

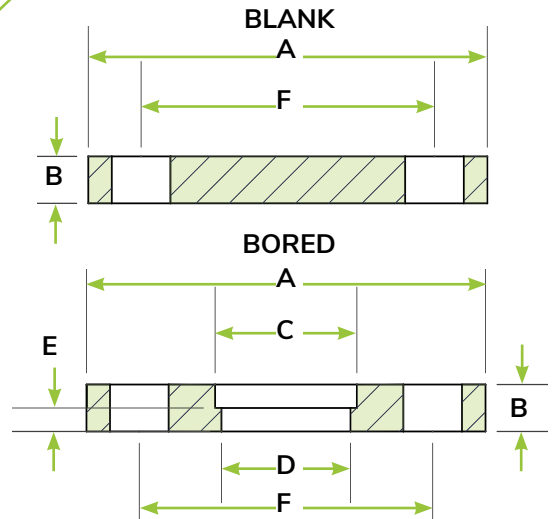
- Designed to fit standard inch tubing O.D.'s
- Self-aligning
- Internal weld
- Rotatable flanges for easier bolt hole alignment
- Blank flanges to close unused ports or custom modify
- Interchangeable with other ASA/ANSI style flanges

Product Specifications:

- Pressure range: HV (approx. 1×10^{-8} Torr)
- Temperature range: -20°C up to 200°C
- Standard materials: 304 grade stainless steel

Options: Call for price and availability

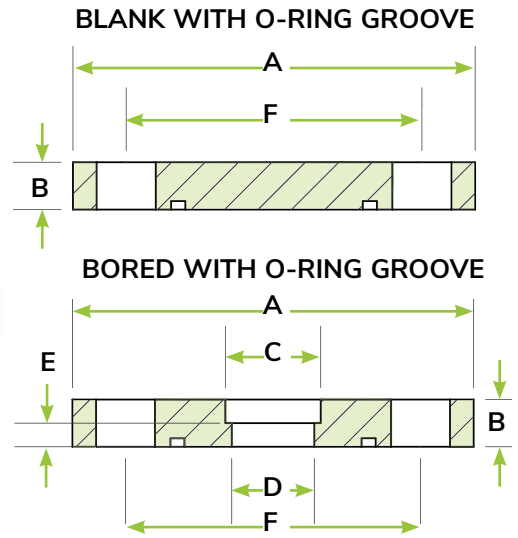
1000 ASA - Fixed Flanges



PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	# of Bolts	HOLE SIZE (in)	UNIT PRICE
6000025	ASA1000-000	16.00	0.750	Blank	-	-	14.250	12	0.812	\$ 710.00
6000026	ASA1000-1000	16.00	0.750	10.020	9.875	0.375	14.250	12	0.812	\$ 710.00
6000027	ASA1000-1200	16.00	0.750	12.020	11.875	0.375	14.250	12	0.812	\$ 710.00

3
1000 ASA Flanges

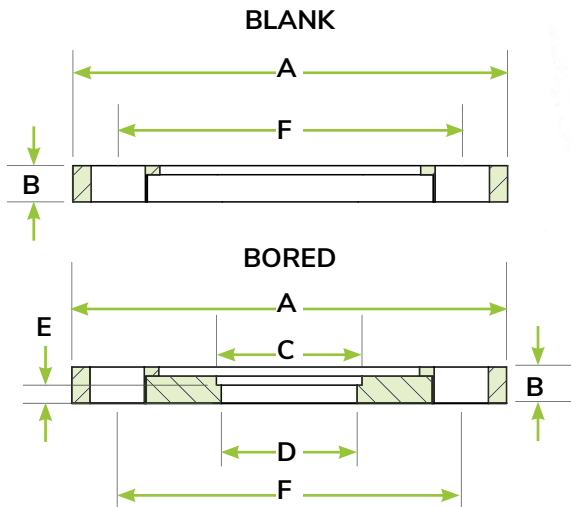
1000 ASA - Fixed, Grooved Flanges



3
1000 ASA Flanges

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	# of Bolts	HOLE SIZE (in)	UNIT PRICE
6000053	ASA1000G-000	16.00	0.750	Blank	-	-	14.250	12	0.812	\$ 770.00
6000054	ASA1000G-1000	16.00	0.750	10.020	9.875	0.375	14.250	12	0.812	\$ 770.00
6000055	ASA1000G-1200	16.00	0.750	12.020	11.875	0.375	14.250	12	0.812	\$ 770.00

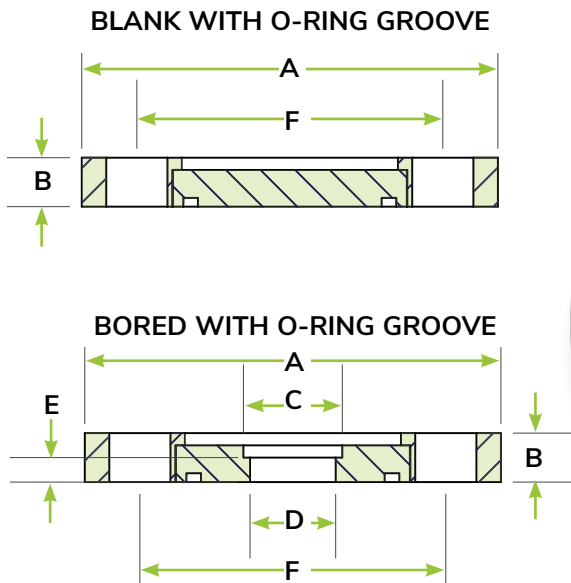
1000 ASA - Rotatable Flanges



PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	# of Bolts	HOLE SIZE (in)	UNIT PRICE
6000081	ASA1000R-000	16.00	0.750	Blank	-	-	14.250	12	0.812	\$ 975.00
6000082	ASA1000R-1000	16.00	0.750	10.020	9.875	0.375	14.250	12	0.812	\$ 900.00
6000083	ASA1000R-1200	16.00	0.750	12.020	11.875	0.375	14.250	12	0.812	\$ 1295.00

1000 ASA - Rotatable, Grooved Flanges

3
1000 ASA Flanges



PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	# of Bolts	HOLE SIZE (in)	UNIT PRICE
6000109	ASA1000RG-000	16.00	0.750	Blank	-	-	14.250	12	0.812	\$ 1015.00
6000110	ASA1000RG-1000	16.00	0.750	10.020	9.875	0.375	14.250	12	0.812	\$ 960.00
6000111	ASA1000RG-1200	16.00	0.750	12.020	11.875	0.375	14.250	12	0.812	\$ 960.00

1000 ASA Hardware

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
0600278	2-278-OV	ASA1000 (1) Viton® O-ring	\$ 18.00
0606507	ASA1000-HBK	ASA1000 (12) Bolt, Nut & Washer Kit; 3/4-10x2 1/4 in.	\$ 69.00



ASA/ANSI Fittings

Specifications:

- Vacuum rated to 1×10^{-8} Torr.
- Leak rating $< 1 \times 10^{-9}$ std. cc/s helium
- Temperature range: -20°C to 200°C
- Standard sizes: 5 inch to 16 inches O.D.
(for tubing diameter 1 inch up to 12 inches)
- Materials:
 - Flanges and fittings:
304 stainless steel
 - Elastomer seals:
Viton[®]

Features:

- Reusable flanges and seals
- Rotatable flanges for easier bolt hole alignment
- Adapters to other flange systems available
- Interchangeable with other ASA/ANSI style flanges made to industry standards



3

ASA/ANSI Fittings

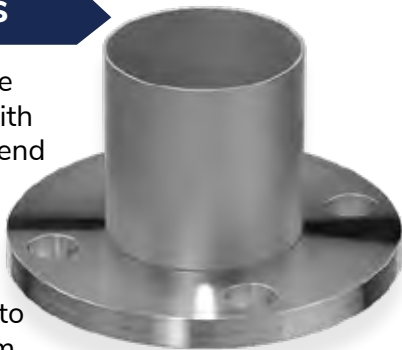
ANCORP's ASA/ANSI fittings make up a complete set of modular components that allow our customers to create a custom vacuum system without the trouble and expense of having in-house machining and welding capabilities.

All **ANCORP** ASA/ANSI fittings are made with flanges manufactured to industry specifications to ensure compatibility with other manufacturer's flanges.

Half Nipples

These fittings are manufactured with a flange on one end and raw tubing on the other.

Half nipples are often welded onto a custom vacuum system or instrument by a customer with in-house welding capabilities. However, these fittings can also be used with quick connect compression fittings to make a vacuum tight connection without welding (see section 7 for our selection of quick disconnect compression fittings). **ANCORP** manufactures standard half nipples in 304 stainless steel, other materials are available on request.

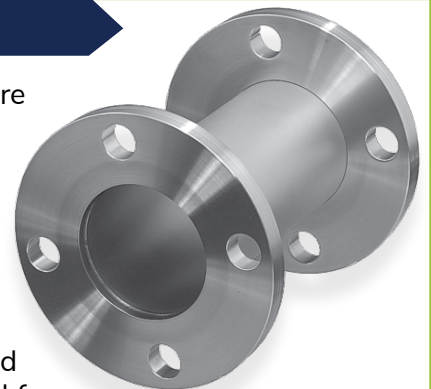


Nipples

These fittings are manufactured with a flange on each end of a straight section of tubing.

Nipples are used to create a weld free straight connection within a vacuum system. Nipples are also used as straight adapters between different tubing sizes or flange types.

These fittings are available in all ASA/ANSI sizes and flange types. **ANCORP** manufactures standard nipples in 304 stainless steel, other materials are available on request.



Elbows



These fittings are manufactured with a flange on each end of a curved section of tubing. Elbows accommodate turns or alignment considerations for vacuum system design.

Elbows are offered in 3 designs: 45° radius elbow, 90° radius elbow and 90° mitered elbow to accommodate a wide variety of system configurations. **ANCORP** manufactures standard elbows in 304 stainless steel, other materials are available on request.

Tees



These fittings are manufactured with a flange on each end of a “T” shaped section of tubing. Tees accommodate junctions or alignment considerations for vacuum system design.

Tees are also used as junction adapters between different tubing sizes or flange types. **ANCORP** manufactures standard tees in 304 stainless steel, other materials are available on request.

Crosses



These fittings are manufactured with a flange on each end of an “X” shaped section of tubing. Crosses accommodate junctions or alignment considerations for vacuum system design.

Crosses are also used as junction adapters between different tubing sizes or flange types. **ANCORP** manufactures standard crosses in 304 stainless steel, other materials are available on request.

5 & 6 Way Crosses and Cubes



These fittings are manufactured with a flange on each end of a 5 or 6 sided tubing junction. These crosses accommodate complex junctions or alignment considerations for vacuum system design.

Larger sizes are sometimes used as the starting point of a simple vacuum chamber design. **ANCORP** manufactures standard 5 and 6-way crosses and cubes in 304 stainless steel, other materials are available on request.

Half Nipples - ASA Fixed Flange

Materials:

- 304 stainless steel

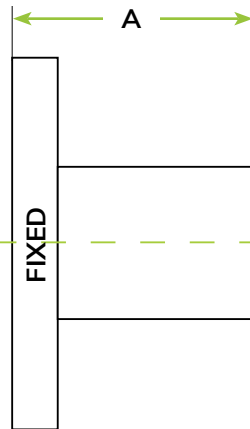
Product Notes:

- Clearance bolt holes
- Butt weld
- Designed to fit standard inch tubing O.D.'S
- Highly customizable
 - o-ring groove available (see chart below)

Options:

Call for price and delivery

- Custom lengths



3 ASA Half Nipples

PART #	REFERENCE ID	FLANGE O.D. (in)	TUBE O.D. (in)	TUBE O.D. (in)	A (in)	UNIT PRICE
6000148	ASA100-100-HN-3.25	4.25	1.00	0.065	3.25	\$ 110.00
6000149	ASA100-150-HN-3.25	4.25	1.50	0.065	3.25	\$ 110.00
6000150	ASA150-150-HN-3.25	5.00	1.50	0.065	3.25	\$ 135.00
6000151	ASA150-200-HN-3.25	5.00	2.00	0.065	3.25	\$ 135.00
6000152	ASA150-250-HN-3.25	5.00	2.50	0.065	3.25	\$ 135.00
6000153	ASA200-200-HN-3.50	6.00	2.00	0.065	3.50	\$ 150.00
6000154	ASA200-250-HN-3.50	6.00	2.50	0.065	3.50	\$ 150.00
6000155	ASA200-300-HN-3.50	6.00	3.00	0.065	3.50	\$ 150.00
6000156	ASA300-300-HN-4.13	7.50	3.00	0.065	4.13	\$ 190.00
6000157	ASA300-400-HN-4.13	7.50	4.00	0.083	4.13	\$ 190.00
6000158	ASA400-400-HN-4.13	9.00	4.00	0.083	4.13	\$ 205.00
6000159	ASA400-600-HN-5.25	9.00	6.00	0.083	5.25	\$ 220.00
6000160	ASA600-600-HN-5.38	11.00	6.00	0.083	5.38	\$ 315.00
6000161	ASA600-800-HN-7.38	11.00	8.00	0.120	7.38	\$ 345.00
6000162	ASA800-800-HN-7.75	13.50	8.00	0.120	7.75	\$ 400.00
6000163	ASA800-1000-HN-9.88	13.50	10.00	0.120	9.88	\$ 435.00
6000164	ASA1000-1000-HN-9.88	16.00	10.00	0.120	9.88	CALL
6000165	ASA1000-1200-HN-9.88	16.00	12.00	0.120	9.88	CALL

O-Ring Groove Option

ANCORP ASA/ANSI flanged fittings come standard with a smooth flange face. The addition of an o-ring groove is a custom option. If you require a grooved flange the additional charge for this is detailed in this chart.

Please Note: Adding a groove is customizing this product and is no longer returnable.

REFERENCE ID	ADDITIONAL COST
ASA100	\$ 20.00
ASA150	\$ 20.00
ASA200	\$ 20.00
ASA300	\$ 35.00
ASA400	\$ 35.00
ASA600	\$ 50.00
ASA800	\$ 55.00
ASA1000	\$ 60.00

Half Nipple - ASA Rotatable Flange

Materials:

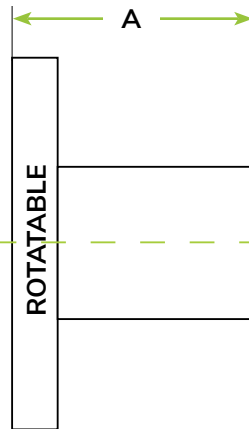
- 304 stainless steel

Product Notes:

- Butt weld
- Designed to fit standard inch tubing O.D.'S
- Highly customizable
 - o-ring groove available (see chart below)

Options: Call for price and delivery

- Custom lengths



3 ASA Half Nipples

PART #	REFERENCE ID	FLANGE O.D. (in)	TUBE O.D. (in)	TUBE O.D. (in)	A (in)	UNIT PRICE
6000184	ASA100R-100-HN-3.25	4.25	1.00	0.065	3.25	\$ 165.00
6000185	ASA100R-150-HN-3.25	4.25	1.50	0.065	3.25	\$ 165.00
6000186	ASA150R-150-HN-3.25	5.00	1.50	0.065	3.25	\$ 185.00
6000187	ASA150R-200-HN-3.25	5.00	2.00	0.065	3.25	\$ 185.00
6000188	ASA150R-250-HN-3.25	5.00	2.50	0.065	3.25	\$ 185.00
6000189	ASA200R-200-HN-3.50	6.00	2.00	0.065	3.50	\$ 240.00
6000190	ASA200R-250-HN-3.50	6.00	2.50	0.065	3.50	\$ 240.00
6000191	ASA200R-300-HN-3.50	6.00	3.00	0.065	3.50	\$ 240.00
6000192	ASA300R-300-HN-4.13	7.50	3.00	0.065	4.13	\$ 285.00
6000193	ASA300R-400-HN-4.13	7.50	4.00	0.083	4.13	\$ 285.00
6000194	ASA400R-400-HN-4.13	9.00	4.00	0.083	4.13	\$ 295.00
6000195	ASA400R-600-HN-5.25	9.00	6.00	0.083	5.25	\$ 315.00
6000196	ASA600R-600-HN-5.38	11.00	6.00	0.083	5.38	\$ 445.00
6000197	ASA600R-800-HN-7.38	11.00	8.00	0.120	7.38	\$ 480.00
6000198	ASA800R-800-HN-7.75	13.50	8.00	0.120	7.75	\$ 530.00
6000199	ASA800R-1000-HN-9.88	13.50	10.00	0.120	9.88	\$ 565.00
6000200	ASA1000R-1000-HN-9.88	16.00	10.00	0.120	9.88	CALL
6000201	ASA1000R-1200-HN-9.88	16.00	12.00	0.120	9.88	CALL

O-Ring Groove Option

ANCORP ASA/ANSI flanged fittings come standard with a smooth flange face. The addition of an o-ring groove is a custom option. If you require a grooved flange the additional charge for this is detailed in this chart.

Please Note: Adding a groove is customizing this product and is no longer returnable.

REFERENCE ID	ADDITIONAL COST
ASA100	\$ 20.00
ASA150	\$ 20.00
ASA200	\$ 20.00
ASA300	\$ 35.00
ASA400	\$ 35.00
ASA600	\$ 50.00
ASA800	\$ 55.00
ASA1000	\$ 60.00

Nipple - ASA Fixed Flange

Materials:

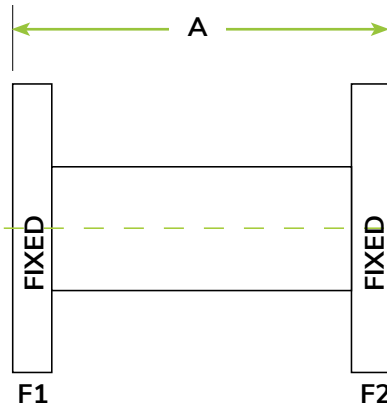
- 304 stainless steel

Product Notes:

- Same size flange on both ends
- Both flanges have a fixed bolt hole orientation
- Highly customizable: o-ring groove available (see chart below)

Options: Call for price and delivery

- Custom lengths
- Custom flange combinations



3

ASA Nipples

PART #	REFERENCE ID	FLANGE O.D. (in)	TUBE O.D. (in)	A (in)	UNIT PRICE
6000220	ASA100XASA100-100-N-6.50	4.25	1.00	6.50	\$ 230.00
6000221	ASA100XASA100-150-N-6.50	4.25	1.50	6.50	\$ 230.00
6000222	ASA100XASA100-150-N-8.00	4.25	1.50	8.00	\$ 240.00
6000223	ASA150XASA150-150-N-6.50	5.00	1.50	6.50	\$ 245.00
6000224	ASA150XASA200-150-N-6.50	5.00	2.00	6.50	\$ 245.00
6000225	ASA150XASA250-150-N-6.50	5.00	2.50	6.50	\$ 245.00
6000226	ASA150XASA250-150-N-8.00	5.00	2.50	8.00	\$ 250.00
6000227	ASA200XASA200-200-N-7.00	6.00	2.00	7.00	\$ 280.00
6000228	ASA200XASA250-200-N-7.00	6.00	2.50	7.00	\$ 280.00
6000229	ASA200XASA300-200-N-7.00	6.00	3.00	7.00	\$ 280.00
6000230	ASA200XASA300-200-N-8.50	6.00	3.00	8.50	\$ 285.00
6000231	ASA300XASA300-300-N-8.26	7.50	3.00	8.26	\$ 345.00
6000232	ASA300XASA300-300-N-9.75	7.50	3.00	9.75	\$ 345.00
6000233	ASA300XASA400-300-N-8.26	7.50	4.00	8.26	\$ 345.00
6000234	ASA300XASA400-300-N-10.24	7.50	4.00	10.24	\$ 355.00
6000235	ASA400XASA400-400-N-8.26	9.00	4.00	8.26	\$ 360.00
6000236	ASA400XASA400-400-N-10.24	9.00	4.00	10.24	\$ 365.00
6000237	ASA400XASA600-400-N-10.50	9.00	6.00	10.50	\$ 375.00
6000238	ASA400XASA600-400-N-12.62	9.00	6.00	12.62	\$ 380.00
6000239	ASA600XASA600-600-N-10.76	11.00	6.00	10.76	\$ 625.00
6000240	ASA600XASA600-600-N-12.88	11.00	6.00	12.88	\$ 630.00
6000241	ASA600XASA800-600-N-10.76	11.00	8.00	10.76	\$ 670.00
6000242	ASA600XASA800-600-N-14.76	11.00	8.00	14.76	\$ 675.00
6000243	ASA800XASA800-800-N-15.50	13.50	8.00	15.50	\$ 740.00
6000244	ASA800XASA1000-800-N-19.76	13.50	10.00	19.76	\$ 775.00
6000245	ASA1000XASA1000-1000-N-19.76	16.00	10.00	19.76	CALL
6000246	ASA1000XASA1200-1000-N-19.76	16.00	12.00	19.76	CALL

O-Ring Groove Option

ANCORP ASA/ANSI flanged fittings come standard with a smooth flange face. The addition of an o-ring groove is a custom option. If you require a grooved flange the additional charge for this is detailed in this chart.

Please Note: Adding a groove is customizing this product and is no longer returnable.

- For this option add the following to the end of the reference number:
ASA800G x ASA 800G

REFERENCE ID	ADDITIONAL COST
ASA100	\$ 20.00
ASA150	\$ 20.00
ASA200	\$ 20.00
ASA300	\$ 35.00
ASA400	\$ 35.00
ASA600	\$ 50.00
ASA800	\$ 55.00
ASA1000	\$ 60.00

Nipple - ASA Rotatable Flange

Materials:

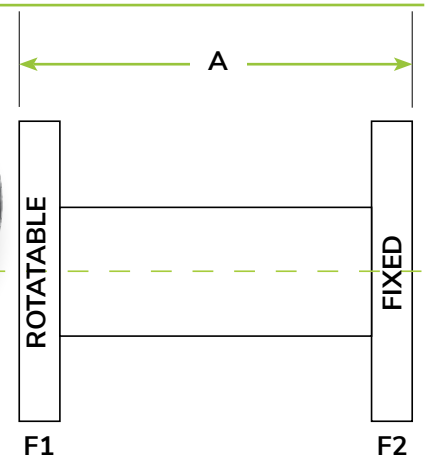
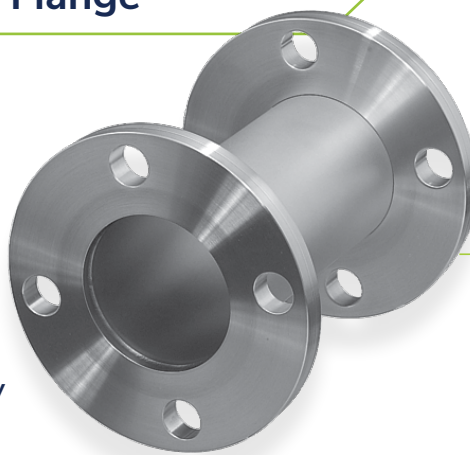
- 304 stainless steel

Product Notes:

- Same size flange on both ends
- Clearance bolt holes
- One fixed and one rotatable flange per fitting
- Highly customizable - o-ring groove available (see chart below)

Options: Call for price and delivery

- Custom lengths
- Custom flange combinations



ASA Nipples

PART #	REFERENCE ID	FLANGE O.D. (in)	TUBE O.D. (in)	A (in)	UNIT PRICE
6000301	ASA100-100-N-6.50	4.25	1.00	6.50	\$ 285.00
6000302	ASA100-150-N-6.50	4.25	1.50	6.50	\$ 285.00
6000303	ASA100-150-N-8.00	4.25	1.50	8.00	\$ 290.00
6000304	ASA150-150-N-6.50	5.00	1.50	6.50	\$ 295.00
6000305	ASA200-150-N-6.50	5.00	2.00	6.50	\$ 295.00
6000306	ASA250-150-N-6.50	5.00	2.50	6.50	\$ 295.00
6000307	ASA250-150-N-8.00	5.00	2.50	8.00	\$ 300.00
6000308	ASA200-200-N-7.00	6.00	2.00	7.00	\$ 365.00
6000309	ASA250-200-N-7.00	6.00	2.50	7.00	\$ 365.00
6000310	ASA300-200-N-7.00	6.00	3.00	7.00	\$ 365.00
6000311	ASA300-200-N-9.75	6.00	3.00	9.75	\$ 370.00
6000312	ASA300-300-N-8.26	7.50	3.00	8.26	\$ 440.00
6000313	ASA300-300-N-9.75	7.50	3.00	9.75	\$ 440.00
6000314	ASA400-300-N-8.26	7.50	4.00	8.26	\$ 440.00
6000315	ASA400-300-N-10.24	7.50	4.00	10.24	\$ 445.00
6000316	ASA400-400-N-8.26	9.00	4.00	8.26	\$ 450.00
6000317	ASA400-400-N-10.24	9.00	4.00	10.24	\$ 455.00
6000318	ASA600-400-N-10.50	9.00	6.00	10.50	\$ 470.00
6000319	ASA600-400-N-12.62	9.00	6.00	12.62	\$ 475.00
6000320	ASA600-600-N-10.76	11.00	6.00	10.76	\$ 755.00
6000321	ASA600-600-N-12.88	11.00	6.00	12.88	\$ 760.00
6000322	ASA800-600-N-10.76	11.00	8.00	10.76	\$ 800.00
6000323	ASA800-600-N-14.76	11.00	8.00	14.76	\$ 805.00
6000324	ASA800-800-N-15.50	13.50	8.00	15.50	\$ 870.00
6000325	ASA1000-800-N-19.76	13.50	10.00	19.76	\$ 905.00
6000326	ASA1000-1000-N-19.76	16.00	10.00	19.76	CALL
6000327	ASA1200-1000-N-19.76	16.00	12.00	19.76	CALL

O-Ring Groove Option

ANCORP ASA/ANSI flanged fittings come standard with a smooth flange face. The addition of an o-ring groove is a standard option. If you require a grooved flange the additional charge for this is detailed in this chart.

Please Note: Adding a groove is customizing this product and is no longer returnable.

- For this option add the following to the end of the reference number:
ASA400GXASA400R

REFERENCE ID	ADDITIONAL COST
ASA100	\$ 20.00
ASA150	\$ 20.00
ASA200	\$ 20.00
ASA300	\$ 35.00
ASA400	\$ 35.00
ASA600	\$ 50.00
ASA800	\$ 55.00
ASA1000	\$ 60.00

Bellows - ASA Fixed Flanges

Materials:

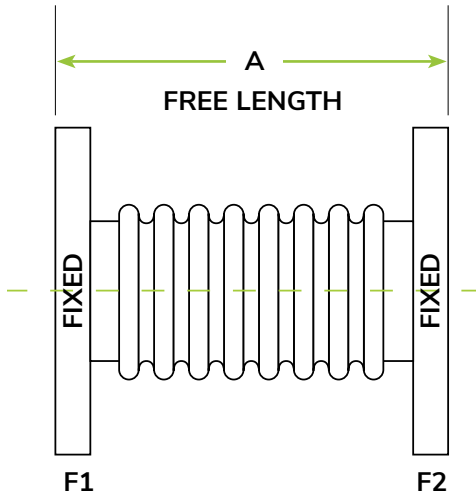
- Flanges: 304 stainless steel
- Flexible hose: 321 stainless steel formed bellows

Product Notes:

- Corrects misaligned connections
- Both flanges have a fixed bolt hole orientation
- O-ring groove available (see chart below)

Options: Call for price and delivery

- Larger sizes
- Custom lengths
- Custom flange combinations



3 ASA Bellows

PART #	REFERENCE ID	FLANGE TYPE	HOSE I.D. (in)	WALL THICKNESS (in)	A (in)	UNIT PRICE
0800182	ASA100XASA100-100-B-4.00	ASA100	1.00	0.006	4.00	\$ 300.00
0800183	ASA100XASA100-150-B-4.00	ASA100	1.50	0.006	4.00	\$ 305.00
0800184	ASA150XASA150-200-B-4.00	ASA150	2.00	0.006	4.00	\$ 320.00
0800186	ASA150XASA150-250-B-6.00	ASA150	2.50	0.008	6.00	\$ 345.00
0800187	ASA200XASA200-300-B-6.00	ASA200	3.00	0.008	6.00	\$ 385.00
0800188	ASA300XASA300-400-B-6.00	ASA300	4.00	0.010	6.00	\$ 520.00
0800189	ASA400XASA400-400-B-6.00	ASA400	4.00	0.010	6.00	\$ 540.00
0800190	ASA400XASA400-600-B-8.00	ASA400	6.00	0.012	8.00	\$ 640.00
0800191	ASA600XASA600-600-B-8.00	ASA600	6.00	0.012	8.00	\$ 820.00

O-Ring Groove Option

ANCORP ASA/ANSI flanged fittings come standard with a smooth flange face. The addition of an o-ring groove is a standard option. If you require a grooved flange the additional charge for this is detailed in this chart.

Please Note: Adding a groove is customizing this product and is no longer returnable.

REFERENCE ID	ADDITIONAL COST
ASA100	\$ 20.00
ASA150	\$ 20.00
ASA200	\$ 20.00
ASA300	\$ 35.00
ASA400	\$ 35.00
ASA600	\$ 50.00
ASA800	\$ 55.00
ASA1000	\$ 60.00

Flexible Nipples - ASA Rotatable Flange

Materials:

- Flanges: 304 stainless steel
- Flexible hose: 321 stainless steel formed bellows

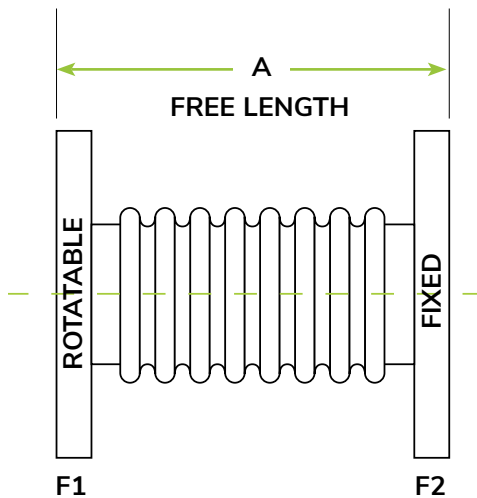
Product Notes:

- Corrects misaligned connections
- One fixed and one rotatable flange per fitting
- O-ring groove available (see chart below)

Options:

Call for price and delivery

- Larger sizes
- Custom lengths
- Custom flange combinations



PART #	REFERENCE ID	FLANGE TYPE	HOSE I.D. (in)	WALL THICKNESS (in)	A (in)	UNIT PRICE
0800197	ASA100-100-B-4.00	ASA100	1.00	0.006	4.00	\$ 370.00
0800198	ASA100-150-B-4.00	ASA100	1.50	0.006	4.00	\$ 375.00
0800199	ASA150-200-B-4.00	ASA150	2.00	0.006	4.00	\$ 415.00
0800200	ASA150-250-B-6.00	ASA150	2.50	0.008	6.00	\$ 440.00
0800201	ASA200-300-B-6.00	ASA200	3.00	0.008	6.00	\$ 545.00
0800202	ASA300-400-B-6.00	ASA300	4.00	0.010	6.00	\$ 695.00
0800203	ASA400-400-B-6.00	ASA400	4.00	0.010	6.00	\$ 715.00
0800204	ASA400-600-B-8.00	ASA400	6.00	0.012	8.00	\$ 815.00
0800205	ASA600-600-B-8.00	ASA600	6.00	0.012	8.00	\$ 1070.00

O-Ring Groove Option

ANCORP ASA/ANSI flanged fittings come standard with a smooth flange face. The addition of an o-ring groove is a standard option. If you require a grooved flange the additional charge for this is detailed in this chart.

Please Note: Adding a groove is customizing this product and is no longer returnable.

REFERENCE ID	ADDITIONAL COST
ASA100	\$ 20.00
ASA150	\$ 20.00
ASA200	\$ 20.00
ASA300	\$ 35.00
ASA400	\$ 35.00
ASA600	\$ 50.00
ASA800	\$ 55.00
ASA1000	\$ 60.00

Reducer Nipples - ASA Fixed Flanges

Materials:

- Flanges: 304 stainless steel

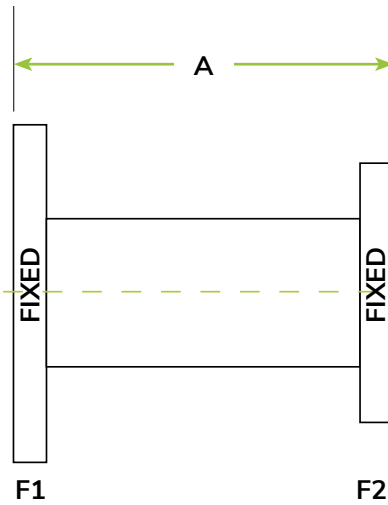
Product Notes:

- Connects different size ASA/ANSI flanges
- Both flanges have a fixed bolt hole orientation
- O-ring groove available (see chart on previous page)

Options:

Call for price and delivery

- Custom lengths
- Conical reducer fitting
- Custom flange combinations



3

ASA Reducer Nipples

PART #	REFERENCE ID	FLANGE 1 O.D. (in)	FLANGE 2 O.D. (in)	TUBE O.D. (in)	A (in)	UNIT PRICE
6000328	ASA150XASA100-150-N-5.00	5.00	4.25	1.50	5.00	\$ 265.00
6000329	ASA200XASA100-150-N-5.00	6.00	4.25	1.50	5.00	\$ 280.00
6000330	ASA200XASA150-200-N-5.00	6.00	5.00	2.00	5.00	\$ 290.00
6000331	ASA300XASA100-150-N-5.00	7.50	4.25	1.50	5.00	\$ 325.00
6000332	ASA300XASA150-200-N-5.00	7.50	5.00	2.00	5.00	\$ 335.00
6000333	ASA300XASA200-300-N-5.00	7.50	6.00	3.00	5.00	\$ 345.00
6000334	ASA400XASA150-200-N-5.00	9.00	5.00	2.00	5.00	\$ 355.00
6000335	ASA400XASA200-300-N-5.00	9.00	6.00	3.00	5.00	\$ 375.00
6000336	ASA400XASA300-400-N-5.00	9.00	7.50	4.00	5.00	\$ 420.00
6000337	ASA600XASA150-200-N-5.00	11.00	5.00	2.00	5.00	\$ 440.00
6000338	ASA600XASA200-300-N-5.00	11.00	6.00	3.00	5.00	\$ 460.00
6000339	ASA600XASA300-400-N-5.00	11.00	7.50	4.00	5.00	\$ 510.00
6000340	ASA600XASA400-600-N-5.00	11.00	9.00	6.00	5.00	\$ 545.00
6000341	ASA800XASA150-200-N-5.00	13.50	5.00	2.00	5.00	\$ 525.00
6000342	ASA800XASA200-300-N-5.00	13.50	6.00	3.00	5.00	\$ 550.00
6000343	ASA800XASA300-400-N-5.00	13.50	7.50	4.00	5.00	\$ 595.00
6000344	ASA800XASA400-600-N-5.00	13.50	9.00	6.00	5.00	\$ 625.00
6000345	ASA800XASA600-800-N-5.00	13.50	11.00	8.00	5.00	\$ 755.00
6000346	ASA1000XASA150-200-N-5.00	16.00	5.00	2.00	5.00	CALL
6000347	ASA1000XASA200-300-N-5.00	16.00	6.00	3.00	5.00	CALL
6000348	ASA1000XASA300-400-N-5.00	16.00	7.50	4.00	5.00	CALL
6000349	ASA1000XASA400-600-N-5.00	16.00	9.00	6.00	5.00	CALL
6000350	ASA1000XASA600-800-N-5.00	16.00	11.00	8.00	5.00	CALL
6000351	ASA1000XASA800-1000-N-5.00	16.00	13.50	10.00	5.00	CALL

Reducer Nipples - ASA Rotatable Flange

Materials:

- Flanges: 304 stainless steel

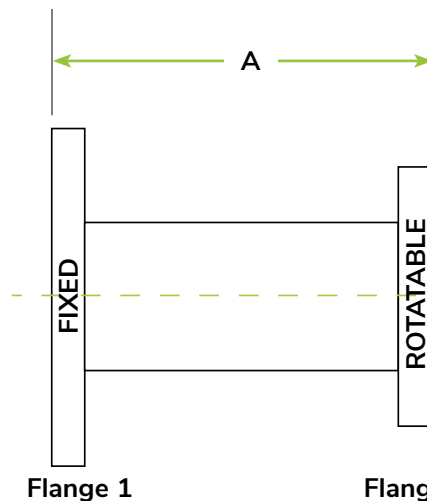
Product Notes:

- Connects different size ASA/ANSI flanges
- One fixed and one rotatable flange per fitting
- O-ring groove available (see chart on page 38)

Options:

Call for price and delivery

- Custom lengths
- Conical reducer fitting
- Custom flange combinations



ASA Reducer Nipples

PART #	REFERENCE ID	FLANGE 1 O.D. (in)	FLANGE 2 O.D. (in)	TUBE O.D. (in)	A (in)	UNIT PRICE
6000352	ASA150XASA100R-150-N-5.00	5.00	4.25	1.50	5.00	\$ 320.00
6000353	ASA200XASA100R-150-N-5.00	6.00	4.25	1.50	5.00	\$ 330.00
6000354	ASA200XASA150R-200-N-5.00	6.00	5.00	2.00	5.00	\$ 340.00
6000355	ASA300XASA100R-150-N-5.00	7.50	4.25	1.50	5.00	\$ 375.00
6000356	ASA300XASA150R-200-N-5.00	7.50	5.00	2.00	5.00	\$ 390.00
6000357	ASA300XASA200R-300-N-5.00	7.50	6.00	3.00	5.00	\$ 435.00
6000358	ASA400XASA150R-200-N-5.00	9.00	5.00	2.00	5.00	\$ 410.00
6000359	ASA400XASA200R-300-N-5.00	9.00	6.00	3.00	5.00	\$ 460.00
6000360	ASA400XASA300R-400-N-5.00	9.00	7.50	4.00	5.00	\$ 515.00
6000361	ASA600XASA150R-200-N-5.00	11.00	5.00	2.00	5.00	\$ 490.00
6000362	ASA600XASA200R-300-N-5.00	11.00	6.00	3.00	5.00	\$ 550.00
6000363	ASA600XASA300R-400-N-5.00	11.00	7.50	4.00	5.00	\$ 600.00
6000364	ASA600XASA400R-600-N-5.00	11.00	9.00	6.00	5.00	\$ 635.00
6000365	ASA800XASA150R-200-N-5.00	13.50	5.00	2.00	5.00	\$ 575.00
6000366	ASA800XASA200R-300-N-5.00	13.50	6.00	3.00	5.00	\$ 635.00
6000367	ASA800XASA300R-400-N-5.00	13.50	7.50	4.00	5.00	\$ 685.00
6000368	ASA800XASA400R-600-N-5.00	13.50	9.00	6.00	5.00	\$ 715.00
6000369	ASA800XASA600R-800-N-5.00	13.50	11.00	8.00	5.00	\$ 890.00
6000370	ASA1000XASA150R-200-N-5.00	16.00	5.00	2.00	5.00	CALL
6000371	ASA1000XASA200R-300-N-5.00	16.00	6.00	3.00	5.00	CALL
6000372	ASA1000XASA300R-400-N-5.00	16.00	7.50	4.00	5.00	CALL
6000373	ASA1000XASA400R-600-N-5.00	16.00	9.00	6.00	5.00	CALL
6000374	ASA1000XASA600R-800-N-5.00	16.00	11.00	8.00	5.00	CALL
6000375	ASA1000XASA800R-1000-N-5.00	16.00	13.50	10.00	5.00	CALL

45° Elbow - ASA Fixed Flanges

Materials:

- Flanges: 304 stainless steel

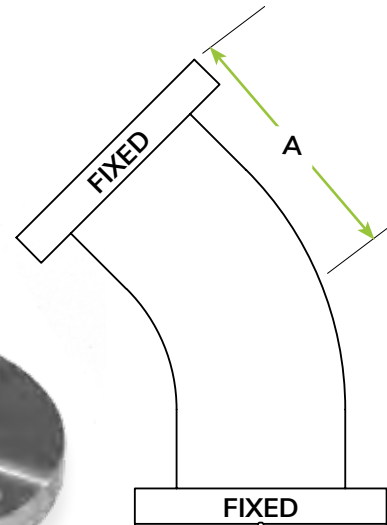
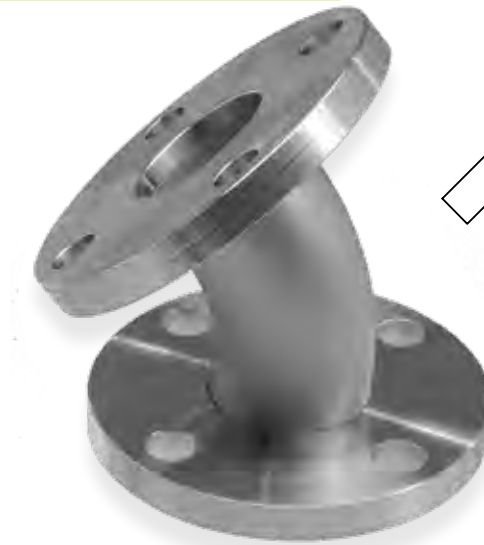
Product Notes:

- Radius elbow design
- Both flanges have a fixed bolt hole orientation
- O-ring groove available (see chart below)

Options:

Call for price and delivery

- Larger sizes
- Custom lengths
- Custom flange combinations



3 45° ASA Elbows

PART #	REFERENCE ID	FLANGE O.D. (in)	TUBE O.D. (in)	A (in)	UNIT PRICE
6000487	ASA100XASA100-150-E45-1.78	4.25	1.50	1.78	\$ 255.00
6000488	ASA150XASA150-200-E45-2.09	5.00	2.00	2.09	\$ 285.00
6000489	ASA200XASA200-300-E45-3.93	6.00	3.00	3.93	\$ 325.00
6000490	ASA300XASA300-400-E45-5.02	7.50	4.00	5.03	\$ 405.00
6000491	ASA400XASA400-400-E45-5.02	9.00	4.00	5.03	\$ 430.00

O-Ring Groove Option

ANCORP ASA/ANSI flanged fittings come standard with a smooth flange face. The addition of an o-ring groove is a standard option. If you require a grooved flange the additional charge for this is detailed in this chart.

Please Note: Adding a groove is customizing this product and is no longer returnable.

REFERENCE ID	ADDITIONAL COST
ASA100	\$ 20.00
ASA150	\$ 20.00
ASA200	\$ 20.00
ASA300	\$ 35.00
ASA400	\$ 35.00
ASA600	\$ 50.00
ASA800	\$ 55.00
ASA1000	\$ 60.00

45° Elbows - ASA Rotatable Flange

Materials:

- Flanges: 304 stainless steel

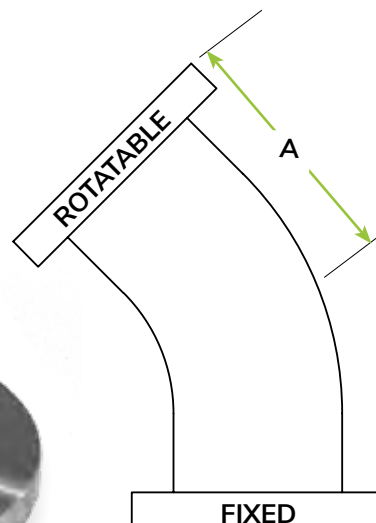
Product Notes:

- Radius elbow design
- One fixed and one rotatable flange per fitting
- O-ring groove available (see chart below)

Options:

Call for price and delivery

- Larger sizes
- Custom lengths
- Custom flange combinations



PART #	REFERENCE ID	FLANGE O.D. (in)	TUBE O.D. (in)	A (in)	UNIT PRICE
6000493	ASA100-150-E45-1.78	4.25	1.50	1.78	\$ 305.00
6000494	ASA150-200-E45-2.09	5.00	2.00	2.09	\$ 335.00
6000495	ASA200-300-E45-3.93	6.00	3.00	3.93	\$ 405.00
6000496	ASA300-400-E45-5.02	7.50	4.00	5.03	\$ 495.00
6000497	ASA400-400-E45-5.02	9.00	4.00	5.03	\$ 520.00

O-Ring Groove Option

ANCORP ASA/ANSI flanged fittings come standard with a smooth flange face. The addition of an o-ring groove is a standard option. If you require a grooved flange the additional charge for this is detailed in this chart.

Please Note: Adding a groove is customizing this product and is no longer returnable.

REFERENCE ID	ADDITIONAL COST
ASA100	\$ 20.00
ASA150	\$ 20.00
ASA200	\$ 20.00
ASA300	\$ 35.00
ASA400	\$ 35.00
ASA600	\$ 50.00
ASA800	\$ 55.00
ASA1000	\$ 60.00

90° Elbows - ASA Fixed Flanges

Materials:

- Flanges: 304 stainless steel

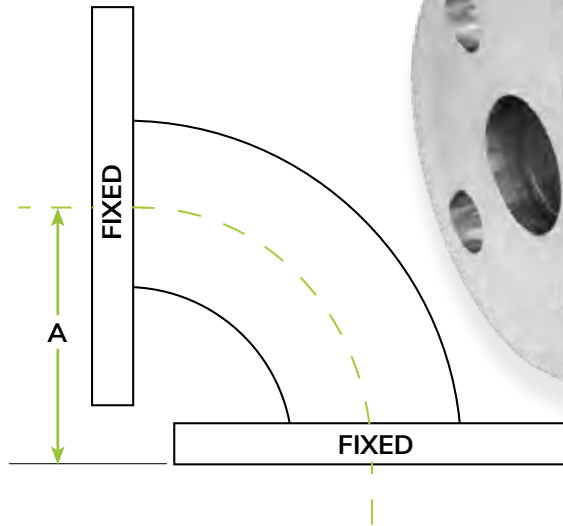
Product Notes:

- Radius elbow design
- Both flanges have a fixed bolt hole orientation
- O-ring groove available (see chart below)

Options:

Call for price and delivery

- Custom lengths
- Custom flange combinations



3
90° ASA Elbows

PART #	REFERENCE ID	FLANGE O.D. (in)	TUBE O.D. (in)	A (in)	UNIT PRICE
6000499	ASA100XASA100-150-E90-2.66	4.25	1.50	2.66	\$ 285.00
6000500	ASA150XASA150-200-E90-3.25	5.00	2.00	3.25	\$ 285.00
6000501	ASA200XASA200-300-E90-4.75	6.00	3.00	4.75	\$ 345.00
6000502	ASA300XASA300-400-E90-6.25	7.50	4.00	6.25	\$ 400.00
6000503	ASA400XASA400-400-E90-6.25	9.00	4.00	6.25	\$ 445.00
6000504	ASA400XASA400-600-E90-9.25	9.00	6.00	9.25	\$ 450.00
6000505	ASA600XASA600-600-E90-9.38	11.00	6.00	9.38	\$ 690.00
6000506	ASA600XASA600-800-E90-12.38	11.00	8.00	12.38	\$ 815.00
6000507	ASA800XASA800-800-E90-12.38	13.50	8.00	12.38	\$ 1005.00
6000508	ASA800XASA800-1000-E90-15.38	13.50	10.00	15.38	\$ 1220.00
6000509	ASA1000XASA1000-1000-E90-15.38	16.00	10.00	15.38	CALL

O-Ring Groove Option

ANCORP ASA/ANSI flanged fittings come standard with a smooth flange face. The addition of an o-ring groove is a standard option. If you require a grooved flange the additional charge for this is detailed in this chart.

Please Note: Adding a groove is customizing this product and is no longer returnable.

REFERENCE ID	ADDITIONAL COST
ASA100	\$ 20.00
ASA150	\$ 20.00
ASA200	\$ 20.00
ASA300	\$ 35.00
ASA400	\$ 35.00
ASA600	\$ 50.00
ASA800	\$ 55.00
ASA1000	\$ 60.00

90° Elbows - ASA Rotatable Flange

Materials:

- Flanges: 304 stainless steel

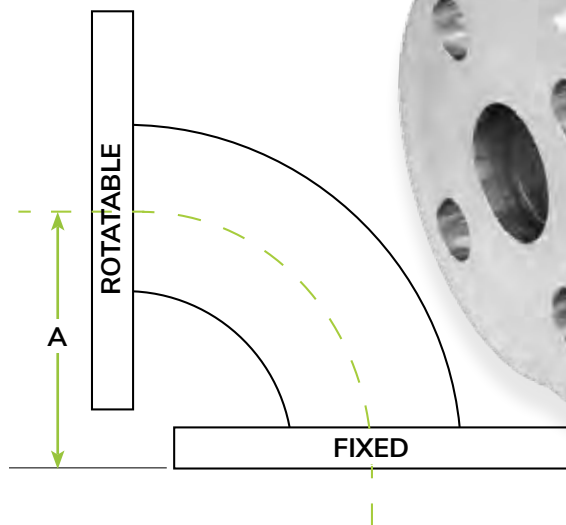
Product Notes:

- Radius elbow design
- One fixed and one rotatable flange per fitting
- O-ring groove available (see chart below)

Options:

Call for price and delivery

- Custom lengths
- Custom flange combinations



3 90° ASA Elbows

PART #	REFERENCE ID	FLANGE O.D. (in)	TUBE O.D. (in)	A (in)	UNIT PRICE
6000511	ASA100-150-E90-2.66	4.25	1.50	2.66	\$ 335.00
6000512	ASA150-200-E90-3.25	5.00	2.00	3.25	\$ 335.00
6000513	ASA200-300-E90-4.75	6.00	3.00	4.75	\$ 435.00
6000514	ASA300-400-E90-6.25	7.50	4.00	6.25	\$ 495.00
6000515	ASA400-400-E90-6.25	9.00	4.00	6.25	\$ 535.00
6000516	ASA400-600-E90-9.25	9.00	6.00	9.25	\$ 545.00
6000517	ASA600-600-E90-9.38	11.00	6.00	9.38	\$ 825.00
6000518	ASA600-800-E90-12.38	11.00	8.00	12.38	\$ 995.00
6000519	ASA800-800-E90-12.38	13.50	8.00	12.38	\$ 1195.00
6000520	ASA800-1000-E90-15.38	13.50	10.00	15.38	\$ 1410.00
6000521	ASA1000-1000-E90-15.38	16.00	10.00	15.38	CALL

O-Ring Groove Option

ANCORP ASA/ANSI flanged fittings come standard with a smooth flange face. The addition of an o-ring groove is a standard option. If you require a grooved flange the additional charge for this is detailed in this chart.

Please Note: Adding a groove is customizing this product and is no longer returnable.

REFERENCE ID	ADDITIONAL COST
ASA100	\$ 20.00
ASA150	\$ 20.00
ASA200	\$ 20.00
ASA300	\$ 35.00
ASA400	\$ 35.00
ASA600	\$ 50.00
ASA800	\$ 55.00
ASA1000	\$ 60.00

90° Mitered Elbow - ASA Fixed Flanges

Materials:

- Flanges: 304 stainless steel

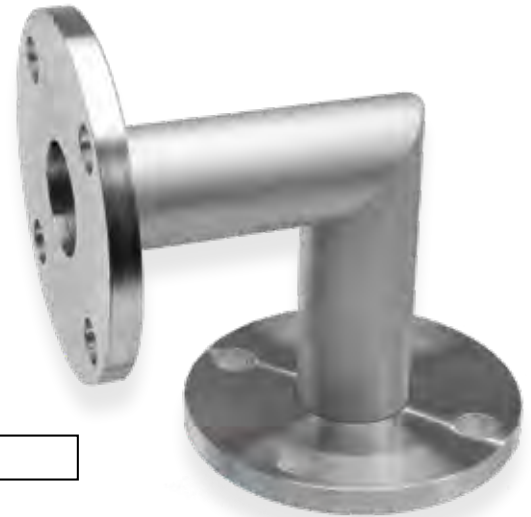
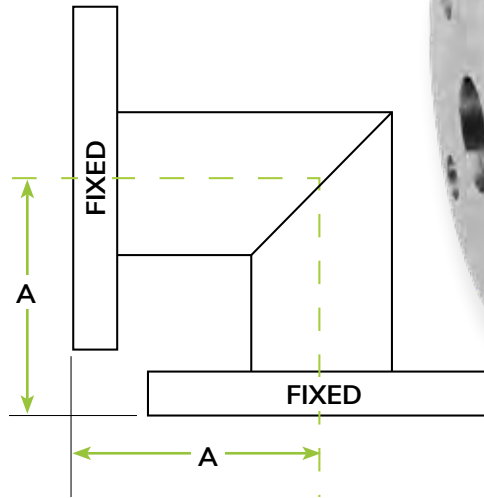
Product Notes:

- Radius elbow design
- Both flanges have a fixed bolt hole orientation
- O-ring groove available (see chart below)

Options:

Call for price and delivery

- Custom lengths
- Custom flange combinations



3
90° ASA Mitered Elbows

PART #	REFERENCE ID	FLANGE O.D. (in)	TUBE O.D. (in)	A (in)	UNIT PRICE
6000523	ASA100XASA100-150-E90M-3.25	4.25	1.50	3.25	\$ 240.00
6000525	ASA150XASA150-200-E90M-3.25	5.00	2.00	3.25	\$ 260.00
6000526	ASA150XASA150-250-E90M-3.25	5.00	2.50	3.25	\$ 280.00
6000529	ASA200XASA200-300-E90M-5.12	6.00	3.00	5.12	\$ 380.00
6000530	ASA300XASA300-300-E90M-5.12	7.50	3.00	5.12	\$ 405.00
6000531	ASA300XASA300-400-E90M-5.12	7.50	4.00	5.12	\$ 420.00
6000532	ASA400XASA400-400-E90M-5.12	9.00	4.00	5.12	\$ 470.00
6000533	ASA400XASA400-600-E90M-5.25	9.00	6.00	5.25	\$ 475.00
6000534	ASA600XASA600-600-E90M-6.44	11.00	6.00	6.44	\$ 650.00
6000535	ASA600XASA600-800-E90M-7.38	11.00	8.00	7.38	\$ 820.00
6000536	ASA800XASA800-800-E90M-7.38	13.50	8.00	7.38	\$ 1010.00
6000537	ASA800XASA800-1000-E90M-9.88	13.50	10.00	9.88	\$ 1225.00
6000538	ASA1000XASA1000-1000-E90M-9.88	16.00	10.00	9.88	CALL

O-Ring Groove Option

ANCORP ASA/ANSI flanged fittings come standard with a smooth flange face. The addition of an o-ring groove is a standard option. If you require a grooved flange the additional charge for this is detailed in this chart.

Please Note: Adding a groove is customizing this product and is no longer returnable.

REFERENCE ID	ADDITIONAL COST
ASA100	\$ 20.00
ASA150	\$ 20.00
ASA200	\$ 20.00
ASA300	\$ 35.00
ASA400	\$ 35.00
ASA600	\$ 50.00
ASA800	\$ 55.00
ASA1000	\$ 60.00

90° Mitered Elbows - ASA Rotatable Flange

Materials:

- 304 stainless steel

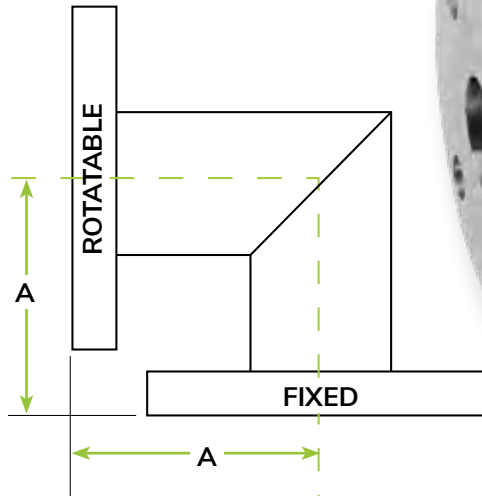
Product Notes:

- One fixed and one rotatable flange per fitting
- O-ring groove available (see chart below)

Options:

Call for price and delivery

- Custom lengths
- Custom flange combinations



3 90° ASA Elbows

PART #	REFERENCE ID	FLANGE O.D. (in)	TUBE O.D. (in)	A (in)	UNIT PRICE
6000540	ASA100-150-E90M-3.25	4.25	1.50	3.25	\$ 325.00
6000542	ASA150-200-E90M-3.25	5.00	2.00	3.25	\$ 335.00
6000543	ASA150-250-E90M-3.25	5.00	2.50	3.25	\$ 360.00
6000546	ASA200-300-E90M-5.12	6.00	3.00	5.12	\$ 485.00
6000547	ASA300-300-E90M-5.12	7.50	3.00	5.12	\$ 505.00
6000548	ASA300-400-E90M-5.12	7.50	4.00	5.12	\$ 535.00
6000549	ASA400-400-E90M-5.12	9.00	4.00	5.12	\$ 575.00
6000550	ASA400-600-E90M-5.25	9.00	6.00	5.25	\$ 645.00
6000551	ASA600-600-E90M-6.44	11.00	6.00	6.44	\$ 815.00
6000552	ASA600-800-E90M-7.38	11.00	8.00	7.38	\$ 995.00
6000553	ASA800-800-E90M-7.38	13.50	8.00	7.38	\$ 1195.00
6000554	ASA800-1000-E90M-9.88	13.50	10.00	9.88	\$ 1410.00
6000555	ASA1000-1000-E90M-9.88	16.00	10.00	9.88	CALL

O-Ring Groove Option

ANCORP ASA/ANSI flanged fittings come standard with a smooth flange face. The addition of an o-ring groove is a standard option. If you require a grooved flange the additional charge for this is detailed in this chart.

Please Note: Adding a groove is customizing this product and is no longer returnable.

REFERENCE ID	ADDITIONAL COST
ASA100	\$ 20.00
ASA150	\$ 20.00
ASA200	\$ 20.00
ASA300	\$ 35.00
ASA400	\$ 35.00
ASA600	\$ 50.00
ASA800	\$ 55.00
ASA1000	\$ 60.00

Tees - ASA Fixed Flanges

Materials:

- Flanges: 304 stainless steel

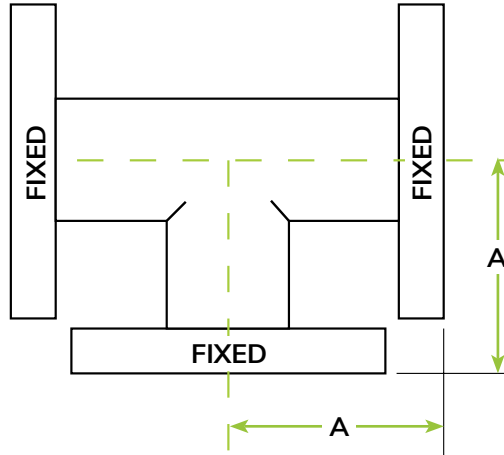
Product Notes:

- Pulled ports for optimum vacuum performance
- Flanges have a fixed bolt hole orientation
- O-ring groove available (see chart below)

Options:

Call for price and delivery

- Custom lengths
- Custom flange combinations
- Reducing tee fittings



3 ASA Tees

PART #	REFERENCE ID	FLANGE O.D. (in)	TUBE O.D. (in)	A (in)	UNIT PRICE
6000556	ASA100XASA100XASA100-150-TEE-2.64	4.25	1.50	2.64	\$ 390.00
6000559	ASA150XASA150XASA150-200-TEE-3.25	5.00	2.00	3.25	\$ 410.00
6000560	ASA150XASA150XASA150-250-TEE-3.25	5.00	2.50	3.25	\$ 440.00
6000563	ASA200XASA200XASA200-300-TEE-3.50	6.00	3.00	3.50	\$ 495.00
6000565	ASA300XASA300XASA300-400-TEE-5.12	7.50	4.00	5.12	\$ 625.00
6000566	ASA400XASA400XASA400-400-TEE-5.12	9.00	4.00	5.12	\$ 645.00
6000567	ASA400XASA400XASA400-600-TEE-5.25	9.00	6.00	5.25	\$ 755.00
6000568	ASA600XASA600XASA600-600-TEE-6.44	11.00	6.00	6.44	\$ 1135.00
6000569	ASA600XASA600XASA600-800-TEE-7.38	11.00	8.00	7.38	\$ 1290.00
6000570	ASA800XASA800XASA800-800-TEE-7.75	13.50	8.00	7.75	\$ 1660.00
6000571	ASA800XASA800XASA800-1000-TEE-9.88	13.50	10.00	9.88	\$ 1945.00
6000572	ASA1000XASA1000XASA1000-1000-TEE-9.88	16.00	10.00	9.88	CALL

O-Ring Groove Option

ANCORP ASA/ANSI flanged fittings come standard with a smooth flange face. The addition of an o-ring groove is a standard option. If you require a grooved flange the additional charge for this is detailed in this chart.

Please Note: Adding a groove is customizing this product and is no longer returnable.

REFERENCE ID	ADDITIONAL COST
ASA100	\$ 20.00
ASA150	\$ 20.00
ASA200	\$ 20.00
ASA300	\$ 35.00
ASA400	\$ 35.00
ASA600	\$ 50.00
ASA800	\$ 55.00
ASA1000	\$ 60.00

Tee - ASA Rotatable Flanges

Materials:

- Flanges: 304 stainless steel

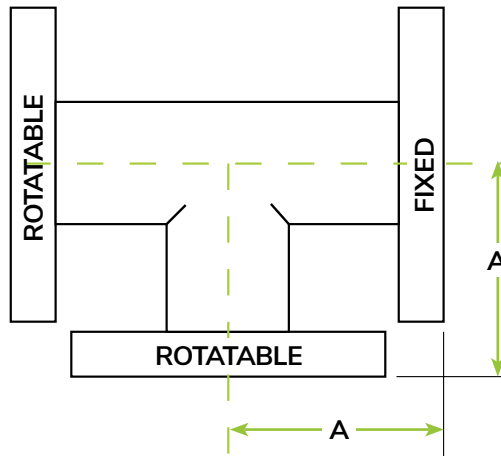
Product Notes:

- Pulled ports for optimum vacuum performance
- One Fixed and one Rotatable flange per axis
- O-ring groove available (see chart below)

Options:

Call for price and delivery

- Custom lengths
- Custom flange combinations
- Reducing tee fittings



3
ASA Tees

PART #	REFERENCE ID	FLANGE O.D. (in)	TUBE O.D. (in)	A (in)	UNIT PRICE
6000573	ASA100-150-2.64	4.25	1.50	2.50	\$ 495.00
6000576	ASA150-200-3.25	5.00	2.00	3.25	\$ 515.00
6000577	ASA150-250-3.25	5.00	2.50	3.25	\$ 545.00
6000580	ASA200-300-3.50	6.00	3.00	3.50	\$ 670.00
6000582	ASA300-400-5.12	7.50	4.00	5.12	\$ 825.00
6000583	ASA400-400-5.12	9.00	4.00	5.12	\$ 830.00
6000584	ASA400-600-5.12	9.00	6.00	5.25	\$ 940.00
6000585	ASA600-600-6.44	11.00	6.00	6.44	\$ 1400.00
6000586	ASA600-800-7.38	11.00	8.00	7.38	\$ 1555.00
6000587	ASA800-800-7.75	13.50	8.00	7.75	\$ 1925.00
6000588	ASA800-1000-9.88	13.50	10.00	9.88	\$ 2210.00
6000589	ASA1000-1000-9.88	16.00	10.00	9.88	CALL

REFERENCE ID	ADDITIONAL COST
ASA100	\$ 20.00
ASA150	\$ 20.00
ASA200	\$ 20.00
ASA300	\$ 35.00
ASA400	\$ 35.00
ASA600	\$ 50.00
ASA800	\$ 55.00
ASA1000	\$ 60.00

O-Ring Groove Option

ANCORP ASA/ANSI flanged fittings come standard with a smooth flange face. Adding a groove to this product is customization and will no longer be returnable. If you require a grooved flange the additional charge for this is detailed in this chart.

Crosses - ASA Rotatable Flanges

Materials:

- Flanges: 304 stainless steel

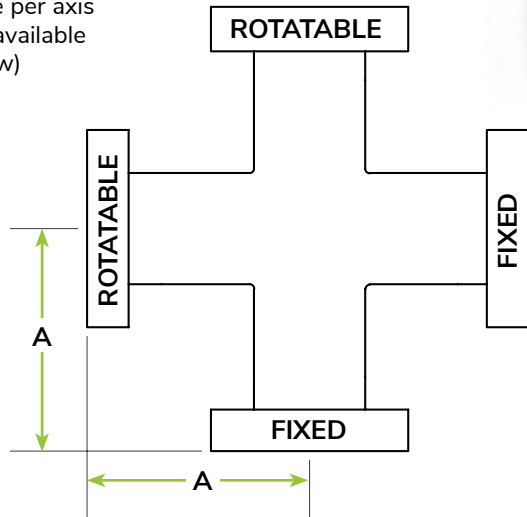
Product Notes:

- Pulled ports for optimum vacuum performance
- One fixed and one rotatable flange per axis
- O-ring groove available (see chart below)

Options:

Call for price and delivery

- Custom lengths
- Custom flange combinations
- Reducing cross fittings



3 ASA Crosses

PART #	REFERENCE ID	FLANGE O.D. (in)	TUBE O.D. (in)	A (in)	UNIT PRICE
6000608	ASA100-150-4X-2.50	4.25	1.50	2.50	\$ 700.00
6000610	ASA150-200-4X-3.25	5.00	2.00	3.25	\$ 725.00
6000611	ASA150-250-4X-3.25	5.00	2.50	3.25	\$ 785.00
6000614	ASA200-300-4X-3.50	6.00	3.00	3.50	\$ 885.00
6000616	ASA300-400-4X-5.12	7.50	4.00	5.12	\$ 1150.00
6000617	ASA400-400-4X-5.12	9.00	4.00	5.12	\$ 1375.00
6000618	ASA400-600-4X-5.25	9.00	6.00	5.25	\$ 1620.00
6000619	ASA600-600-4X-6.44	11.00	6.00	6.44	\$ 2035.00
6000620	ASA800-600-4X-7.38	11.00	8.00	7.38	\$ 2575.00
6000621	ASA800-800-4X-7.75	13.50	8.00	7.75	\$ 3985.00
6000622	ASA800-1000-4X-9.88	13.50	10.00	9.88	\$ 3900.00
6000623	ASA1000-1000-4X9.88	16.00	10.00	9.88	\$ 5150.00

REFERENCE ID	ADDITIONAL COST
ASA100	\$ 20.00
ASA150	\$ 20.00
ASA200	\$ 20.00
ASA300	\$ 35.00
ASA400	\$ 35.00
ASA600	\$ 50.00
ASA800	\$ 55.00
ASA1000	\$ 60.00

O-Ring Groove Option

ANCORP ASA/ANSI flanged fittings come standard with a smooth flange face. Adding a groove to this product is customization and will no longer be returnable. If you require a grooved flange the additional charge for this is detailed in this chart.

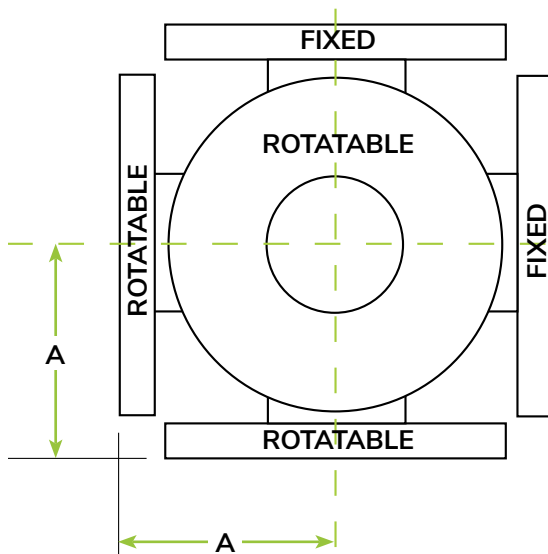
5-Way Crosses - ASA Rotatable Flanges

Materials:

- Flanges: 304 stainless steel

Product Notes:

- Pulled ports for optimum vacuum performance
- One fixed and one rotatable flange per axis
- O-ring groove available (see chart below)



Options:

Call for price and delivery

- Custom lengths
- Custom flange combinations

3
ASA 5-Way Crosses

PART #	REFERENCE ID	FLANGE O.D. (in)	TUBE O.D. (in)	A (in)	UNIT PRICE
6000640	ASA100-150-5X-2.50	4.25	1.50	2.50	\$ 800.00
6000641	ASA150-200-5X-3.25	5.00	2.00	3.25	\$ 910.00
6000642	ASA150-250-5X-3.25	5.00	2.50	3.25	\$ 1005.00
6000644	ASA200-300-5X-3.50	6.00	3.00	3.50	\$ 1225.00
6000646	ASA300-400-5X-5.12	7.50	4.00	5.12	\$ 1665.00
6000647	ASA400-400-5X-5.12	9.00	4.00	5.12	\$ 1750.00
6000648	ASA400-600-5X-5.25	9.00	6.00	5.25	CALL
6000649	ASA600-600-5X-6.44	11.00	6.00	6.44	CALL
6000650	ASA600-800-5X-7.38	11.00	8.00	7.38	CALL
6000651	ASA800-800-5X-7.75	13.50	8.00	7.75	CALL
6000652	ASA800-1000-5X-9.88	13.50	10.00	9.88	CALL
6000653	ASA1000-1000-5X-9.88	16.00	10.00	9.88	CALL

REFERENCE ID	ADDITIONAL COST
ASA100	\$ 20.00
ASA150	\$ 20.00
ASA200	\$ 20.00
ASA300	\$ 35.00
ASA400	\$ 35.00
ASA600	\$ 50.00
ASA800	\$ 55.00
ASA1000	\$ 60.00

O-Ring Groove Option

ANCORP ASA/ANSI flanged fittings come standard with a smooth flange face. Adding a groove to this product is customization and will no longer be returnable. If you require a grooved flange the additional charge for this is detailed in this chart.

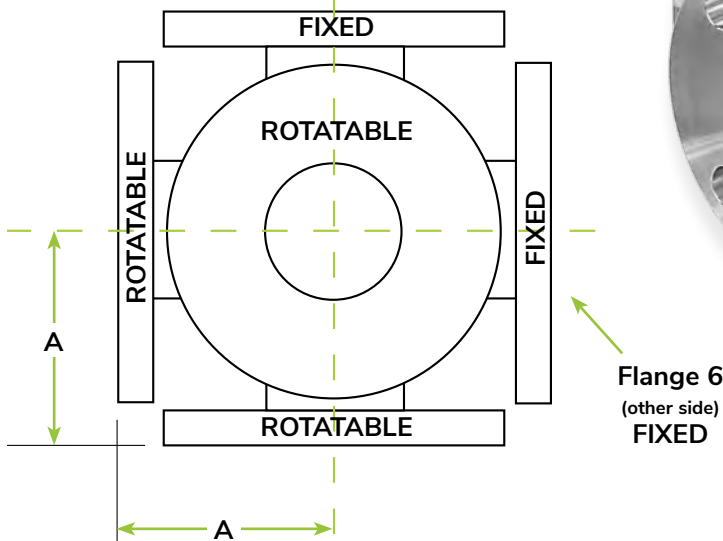
6-Way Crosses - ASA Rotatable Flanges

Materials:

- 304 stainless steel

Product Notes:

- Pulled ports for optimum vacuum performance
- One fixed and one rotatable flange per axis
- O-ring groove available (see chart below)



3
ASA 6-Way Crosses

Options:

Call for price and delivery

- Custom lengths
- Custom flange combinations

PART #	REFERENCE ID	FLANGE O.D. (in)	TUBE O.D. (in)	A (in)	UNIT PRICE
6000671	ASA150-200-6X-2.50	4.25	1.50	2.50	\$ 1065.00
6000672	ASA150-250-6X-3.25	5.00	2.00	3.25	\$ 1110.00
6000673	ASA200-300-6X-3.50	5.00	2.50	3.25	\$ 1320.00
6000675	ASA300-400-6X-5.12	6.00	3.00	3.50	\$ 1620.00
6000677	ASA400-400-6X-5.12	7.50	4.00	5.12	\$ 1945.00
6000678	ASA400-600-6X-5.25	9.00	4.00	5.12	\$ 2165.00
6000679	ASA600-600-6X-6.44	9.00	6.00	5.25	CALL
6000680	ASA600-800-6X-7.38	11.00	6.00	6.44	CALL
6000681	ASA800-800-6X-7.75	11.00	8.00	7.38	CALL
6000682	ASA800-1000-6X-9.88	13.50	8.00	7.75	CALL
6000683	ASA1000-1000-6X-9.88	13.50	10.00	9.88	CALL
6000684	1000ASA-1000-R-6X	16.00	10.00	9.88	CALL

REFERENCE ID	ADDITIONAL COST
ASA100	\$ 20.00
ASA150	\$ 20.00
ASA200	\$ 20.00
ASA300	\$ 35.00
ASA400	\$ 35.00
ASA600	\$ 50.00
ASA800	\$ 55.00
ASA1000	\$ 60.00

O-Ring Groove Option

ANCORP ASA/ANSI flanged fittings come standard with a smooth flange face. Adding a groove to this product is customization and will no longer be returnable. If you require a grooved flange the additional charge for this is detailed in this chart.



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Hybrid Adapters



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Hybrid ADAPTERS



Overview

ANCORP hybrid adapter fittings allow vacuum users to connect two dissimilar vacuum flanges or a vacuum flange to a fitting used in conjunction with vacuum process (Swagelok®, VCR®, NPT).

To minimize the effect this transition fitting has on conductance, hybrid adapters are designed with the shortest length and with the largest inner diameter possible.

Please note that hybrid adapters are not used to change sizes within one flange family. Fittings used to connect two differently sized flanges from within the same vacuum flange family are called reducer fittings. These fittings can be found in the catalog section for that specific flange family.

Specifications:

- **Vacuum Rating:**
 - UHV hybrid adapters: CF to Swagelok® or CF to VCR®
 - HV hybrid adapters: All flanges and fittings that include an elastomer seal
- **Leak Rating:** 1×10^{-9} std. cc/s helium
- **Temperature Range:**
 - Metal seal flanges and fittings: -200°C up to 450°C
 - Elastomer seal flanges and fittings -20°C up to 200°C
- **Materials:**
 - Flanges and fittings: 304 stainless steel and aluminum
 - Flange seals: see the catalog section for that specific flange for its sealing options
 - Fitting seals: Viton® or Buna (Swagelok® and VCR® seals are not included with the assembly)

TECH TIP



ISO-QF and ISO-LF look different, but are in fact part of the same vacuum flange family. Thus QF to LF reducer fittings are listed in the ISO section of the catalog.

Features:

- Adapt from one family of vacuum flanges or fittings to another
- Allows connection of vacuum flanges to non-vacuum fittings.
- Wide variety of design options to meet your application needs.

Flange to Flange

These fittings allow transitions between two dissimilar flange families - for example a CF flange to an ISO-QF. Common uses for these fittings include retro-fitting an existing vacuum system or adding gauges and instrumentation.

Flange to Fitting

These fittings allow transitions between standard vacuum flanges and a variety of specialty fittings employed in a vacuum system. An example of this is a QF flange to VCR® fitting. Common uses for these fittings include the introduction of process gases into a chamber or the addition of gauges or instrumentation.

CF to QF Adapter

Materials:

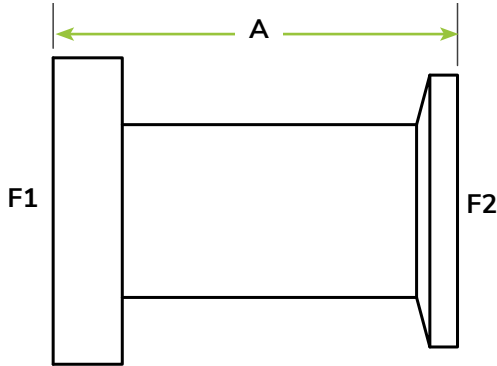
- 304 stainless steel

Product Notes:

- Adapts from CF to ISO-QF flanges

Options: Call for price and availability

- Custom flange combinations and additional sizes
- Tee, cross and elbow adapters



4
CF to QF Adapters

PART #	REFERENCE ID	FLANGE 1 (in)	FLANGE 2 (in)	A (in)	TUBE O.D. (in)	UNIT PRICE
5000678	CF133XQF16-075-N-1.75	1.33	1.180	1.75	0.75	\$55.00
5000679	CF275XQF16-075-N-1.78	2.72	1.180	1.78	0.75	\$64.00
5000680	CF212XQF25-100-N-1.75	2.12	1.575	1.75	1.00	\$61.00
5000681	CF275XQF25-100-N-1.78	2.72	1.575	1.78	1.00	\$66.00
5000682	CF275XQF40-150-N-1.78	2.72	2.165	1.78	1.50	\$72.00
5000683	CF338XQF40-150-N-1.80	3.38	2.165	1.80	1.50	\$105.00
5000684	CF133XQF50-075-N-1.95	1.33	2.953	1.95	0.75	\$69.00
5000685	CF275XQF50-150-N-1.95	2.72	2.953	1.95	1.50	\$77.00
5000686	CF338XQF50-200-N-1.80	3.38	2.953	1.80	2.00	\$99.00

ORDERING NOTE: Tee, cross and elbow hybrid adapters are also available - contact the sales department for a quote

CF to QF Conical Adapter

Materials:

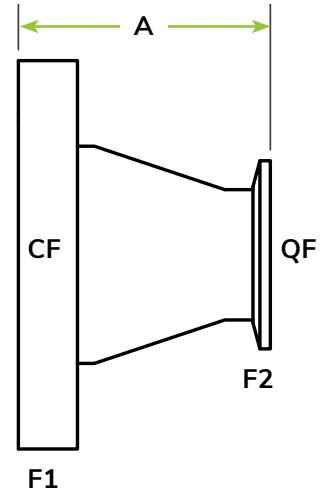
- 304 stainless steel

Product Notes:

- Adapts from CF to ISO-QF flanges for different tubing diameters.

Options: Call for price and delivery

- Custom flange combinations and additional sizes
- Tee, cross and elbow adapters



CF to QF

PART #	REFERENCE ID	FLANGE 1 TYPE	FLANGE 1 TUBE O.D. (in)	FLANGE 2 TYPE	FLANGE 2 TUBE O.D. (in)	A (in)	UNIT PRICE
5000691	CF212XQF16-100X075-CR-1.69	CF212	1.00	QF16	0.75	1.69	CALL
5000694	CF275XQF16-150X075-CR-2.73	CF275	1.50	QF16	0.75	2.73	CALL
5000695	CF275XQF25-150X100-CR-2.73	CF275	1.50	QF25	1.00	2.73	\$76.00
5000697	CF338XQF25-200X100-CR-2.75	CF338	2.00	QF25	1.00	2.75	CALL
5000698	CF338XQF40-200X150-CR-2.75	CF338	2.00	QF40	1.50	2.75	CALL
5000699	CF450XQF40-250X150-CR-2.90	CF450	2.50	QF40	1.50	2.90	CALL
5000700	CF450XQF50-250X200-CR-2.90	CF450	2.50	QF50	2.00	2.90	CALL
5000701	CF462XQF40-300X150-CR-4.15	CF462	3.00	QF40	1.50	4.15	CALL
5000702	CF462XQF50-300X200-CR-4.15	CF462	3.00	QF50	2.00	4.15	CALL
5000703	CF600XQF50-400X200-CR-4.21	CF600	4.00	QF50	2.00	4.21	CALL

QF to CF Conical Adapter

Materials:

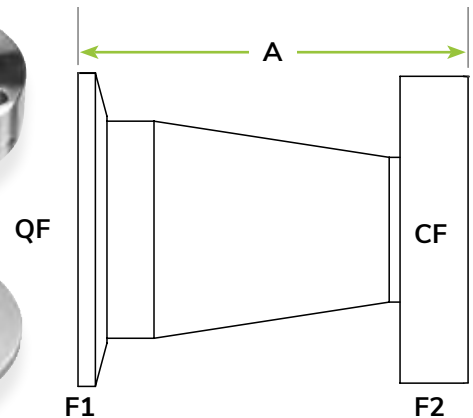
- 304 stainless steel

Product Notes:

- Adapts from CF to ISO-QF flanges for different tubing diameters.

Options: Call for price and delivery

- Custom flange combinations and additional sizes
- Tee, cross and elbow adapters



QF to CF

PART #	REFERENCE ID	FLANGE 1 TYPE	FLANGE 1 TUBE O.D. (in)	FLANGE 2 TYPE	FLANGE 2 TUBE O.D. (in)	A (in)	UNIT PRICE
5000689	QF25XCF133-100X075-CR-2.03	QF25	1.00	CF133	0.75	2.03	CALL
5000690	QF40XCF133-150X075-CR-3.03	QF40	1.50	CF133	0.75	3.03	CALL
5000692	QF40XCF212-150X100-CR-2.70	QF40	1.50	CF212	1.00	2.70	CALL
5000693	QF50XCF212-200X100-CR-2.69	QF50	2.00	CF212	1.00	2.69	CALL
5000696	QF50XCF275-200X150-CR-2.73	QF50	2.00	CF275	1.50	2.73	\$85.00

CF to LF Adapter

Materials:

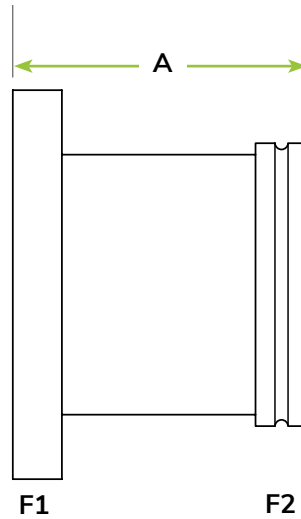
- 304 stainless steel

Product Notes:

- Adapts from CF to ISO-LF flanges for the same tubing diameter.

Options: Call for price and delivery

- Custom flange combinations and additional sizes
- Tee, cross and elbow adapter



4 CF to LF Adapters

PART #	REFERENCE ID	FLANGE 1 TYPE	FLANGE 2 TYPE	A (in)	TUBE O.D. (in)	UNIT PRICE
5000704	CF450XLF63-250-N-4.33	CF450	LF63	4.33	2.50	\$185.00
5000705	CF462XLF80-300-N-4.33	CF462	LF80	4.33	3.00	\$230.00
5000706	CF600XLF80-300-N-4.33	CF600	LF80	4.33	3.00	\$235.00
5000707	CF600XLF100-400-N-4.37	CF600	LF100	4.37	4.00	\$250.00
5000708	CF800XLF160-600-N-4.45	CF800	LF160	4.45	6.00	\$385.00
5000709	CF1000XLF200-800-N-4.45	CF1000	LF200	4.45	8.00	\$560.00



What advantage does a conical reducer offer compared to a similarly flanged straight reducer?

The answer is simple:

CONDUCTANCE!

Over the same length, a conical reducer has a larger mean diameter than a straight reducer with the same flange terminations. As illustrated by the equation for conductance (C) below, diameter (D) has a third-order effect on conductance. So, if you want to increase conductance, increasing diameter is the best place to start! Reducing length (L) helps as well, but length only has a first-order effect on conductance.

Eliminating bends in a system is another way to optimize conductance. When it comes to designing a system for optimal conductance, it helps to remember these three characteristics: Fat, Short, and Straight!

CF to LF Conical Adapter

Materials:

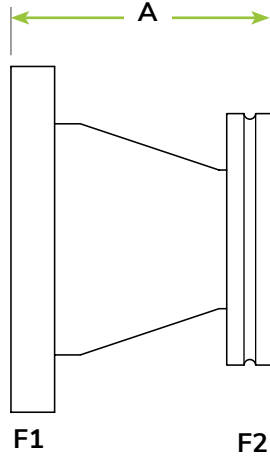
- 304 stainless steel

Product Notes:

- Adapts from CF to ISO-LF flanges for the same tubing diameter.

Options: Call for price and delivery

- Custom flange combinations and additional sizes
- Tee, cross and elbow adapter



CF to LF

PART #	REFERENCE ID	FLANGE 1 TYPE	FLANGE 1 TUBE O.D. (in)	FLANGE 2 TYPE	FLANGE 2 TUBE O.D. (in)	A (in)	B.H.C. (in)	UNIT PRICE
5000717	CF462XLF63-300X250-CR-4.25	CF462	3.00	LF63	2.50	4.250	4.030	\$200.00
5000719	CF600XLF63-400X250-CR-4.31	CF600	4.00	LF63	2.50	4.313	5.128	\$220.00
5000720	CF600XLF80-400X300-CR-4.31	CF600	4.00	LF80	3.00	4.313	5.128	\$250.00

LF to CF Conical Adapter

Materials:

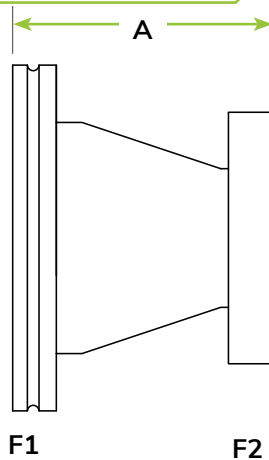
- 304 stainless steel

Product Notes:

- Adapts from CF to ISO-LF flanges for the same tubing diameter.

Options: Call for price and delivery

- Custom flange combinations and additional sizes
- Tee, cross and elbow adapter



LF to CF

PART #	REFERENCE ID	FLANGE 1 TYPE	FLANGE 1 TUBE O.D. (in)	FLANGE 2 TYPE	FLANGE 2 TUBE O.D. (in)	A (in)	B.H.C. (in)	UNIT PRICE
5000710	LF63XCF275-250X150-CR-2.83	LF63	2.50	CF275	1.50	2.83	2.312	\$135.00
5000711	LF80XCF275-300X150-CR-4.08	LF80	3.00	CF275	1.50	4.08	2.312	\$170.00
5000712	LF63XCF338-250X200-CR-2.85	LF63	2.50	CF338	2.00	2.85	2.850	\$160.00
5000713	LF80XCF338-300X200-CR-4.10	LF80	3.00	CF338	2.00	4.10	2.850	\$195.00
5000714	LF100XCF338-400X200-CR-4.10	LF100	4.00	CF338	2.00	4.10	2.850	\$205.00
5000715	LF80XCF450-300X250-CR-4.25	LF80	3.00	CF450	2.50	4.25	3.628	\$215.00
5000716	LF100XCF450-400X250-CR-4.25	LF100	4.00	CF450	2.50	4.25	3.628	\$230.00
5000718	LF100XCF462-400X300-CR-4.25	LF100	4.00	CF462	3.00	4.25	4.030	\$240.00

4 CF to LF Adapters

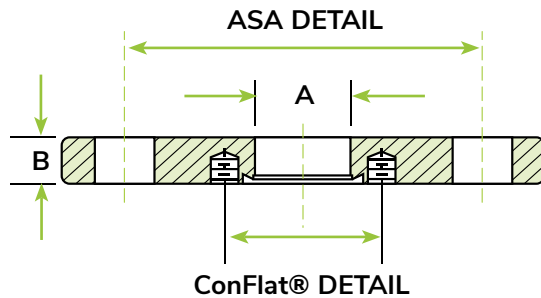
CF to ASA/ANSI Zero Length Reducer Flange

Product Notes:

- Adapts from CF to ASA/ANSI flanges with minimal impact on system space.

Materials:

- 304 stainless steel



Options: Call for price and delivery

- Custom flange combinations and additional sizes
- Order ASA/ANSI flanges with or without sealing groove

4
CF to ASA/ANSI ZLR Flanges

PART #	REFERENCE ID	CONFLAT DETAIL	ASA DETAIL	A (in)	B (in)	ASA B.H.C. (in)	UNIT PRICE
5000721	CF133BTXASA100-0.625-ZLR-0.500	CF133BT	ASA100	0.625	0.50	3.125	\$145.00
5000723	CF212BTXASA100-1.000-ZLR-0.500	CF212BT	ASA100	1.00	0.50	3.125	\$145.00
5000725	CF133BTXASA150-0.625-ZLR-0.500	CF133BT	ASA150	0.625	0.50	3.880	\$190.00
5000727	CF212BTXASA150-1.000-ZLR-0.500	CF212BT	ASA150	1.00	0.50	3.880	\$200.00
5000729	CF275BTXASA150-1.500-ZLR-0.500	CF275BT	ASA150	1.50	0.50	3.880	\$200.00
5000731	CF133BTXASA200-0.625-ZLR-0.500	CF133BT	ASA200	0.625	0.50	4.750	\$235.00
5000733	CF212BTXASA200-1.000-ZLR-0.500	CF212BT	ASA200	1.00	0.50	4.750	\$235.00
5000735	CF275BTXASA200-1.500-ZLR-0.500	CF275BT	ASA200	1.50	0.50	4.750	\$240.00
5000737	CF338BTXASA200-2.000-ZLR-0.500	CF338BT	ASA200	2.00	0.50	4.750	\$250.00
5000739	CF133BTXASA300-0.625-ZLR-0.500	CF133BT	ASA300	0.625	0.50	6.000	\$250.00
5000741	CF212BTXASA300-1.000-ZLR-0.500	CF212BT	ASA300	1.00	0.50	6.000	\$250.00
5000743	CF275BTXASA300-1.500-ZLR-0.500	CF275BT	ASA300	1.50	0.50	6.000	\$250.00
5000745	CF338BTXASA300-2.000-ZLR-0.500	CF338BT	ASA300	2.00	0.50	6.000	\$285.00
5000747	CF450BTXASA300-2.500-ZLR-0.500	CF450BT	ASA300	2.50	0.50	6.000	\$285.00
5000749	CF133BTXASA400-0.625-ZLR-0.500	CF133BT	ASA400	0.625	0.50	7.500	\$285.00
5000751	CF212BTXASA400-1.000-ZLR-0.500	CF212BT	ASA400	1.00	0.50	7.500	\$285.00
5000753	CF275BTXASA400-1.500-ZLR-0.500	CF275BT	ASA400	1.50	0.50	7.500	\$285.00
5000755	CF338BTXASA400-2.000-ZLR-0.500	CF338BT	ASA400	2.00	0.50	7.500	\$300.00
5000757	CF450BTXASA400-2.500-ZLR-0.500	CF450BT	ASA400	2.50	0.50	7.500	\$330.00
5000759	CF462BTXASA400-3.000-ZLR-0.500	CF462BT	ASA400	3.00	0.50	7.500	\$330.00
5000761	CF600BTXASA400-4.000-ZLR-0.500	CF600BT	ASA400	4.00	0.50	7.500	\$370.00
5000763	CF133BTXASA600-0.625-ZLR-0.750	CF133BT	ASA600	0.625	0.75	9.500	\$360.00
5000765	CF212BTXASA600-1.000-ZLR-0.750	CF212BT	ASA600	1.00	0.75	9.500	\$360.00
5000767	CF275BTXASA600-1.500-ZLR-0.750	CF275BT	ASA600	1.50	0.75	9.500	\$360.00
5000769	CF338BTXASA600-2.000-ZLR-0.750	CF338BT	ASA600	2.00	0.75	9.500	\$385.00
5000771	CF450BTXASA600-2.500-ZLR-0.750	CF450BT	ASA600	2.50	0.75	9.500	\$385.00
5000773	CF462BTXASA600-3.000-ZLR-0.750	CF462BT	ASA600	3.00	0.75	9.500	\$390.00
5000775	CF600BTXASA600-4.000-ZLR-0.750	CF600BT	ASA600	4.00	0.75	9.500	\$410.00
5000777	CF800BTXASA600-6.000-ZLR-0.750	CF800BT	ASA600	6.00	0.75	9.500	\$435.00

CF to ASA/ANSI Adapter Fitting

Materials:

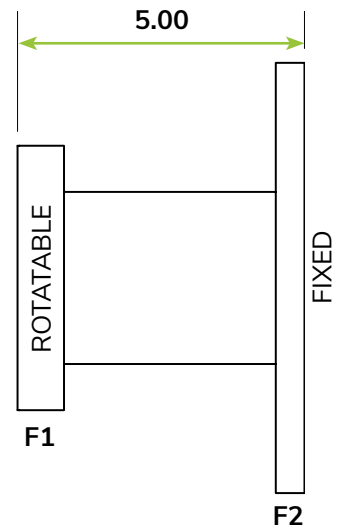
- 304 stainless steel

Product Notes:

- Adapts from CF to ASA/ANSI flanges for the same tubing diameter.

Options: Call for price and delivery

- Custom Flange Combinations and additional sizes
- Tee, Cross and Elbow adapter
- Order ASA/ANSI flanges with or without sealing groove



PART #	REFERENCE ID	FLANGE 1 TYPE	FLANGE 2 TYPE	TUBE O.D. (in)	UNIT PRICE
5000807	CF133RXASA100-075-N-5.00	CF133R	ASA100	0.75	\$135.00
5000809	CF212RXASA100-100-N-5.00	CF212R	ASA100	1.00	\$140.00
5000811	CF275RXASA100-150-N-5.00	CF275R	ASA100	1.50	\$145.00
5000813	CF133RXASA150-075-N-5.00	CF133R	ASA150	0.75	\$150.00
5000815	CF212RXASA150-100-N-5.00	CF212R	ASA150	1.00	\$155.00
5000817	CF275RXASA150-150-N-5.00	CF275R	ASA150	1.50	\$165.00
5000819	CF133RXASA200-075-N-5.00	CF133R	ASA200	0.75	\$170.00
5000821	CF212RXASA200-100-N-5.00	CF212R	ASA200	1.00	\$175.00
5000823	CF275RXASA200-150-N-5.00	CF275R	ASA200	1.50	\$180.00
5000825	CF338RXASA200-200-N-5.00	CF338R	ASA200	2.00	\$205.00
5000827	CF450RXASA200-250-N-5.00	CF450R	ASA200	2.50	\$215.00
5000829	CF462RXASA200-300-N-5.00	CF462R	ASA200	3.00	\$220.00
5000831	CF133RXASA300-075-N-5.00	CF133R	ASA300	0.75	\$190.00
5000833	CF212RXASA300-100-N-5.00	CF212R	ASA300	1.00	\$190.00
5000835	CF275RXASA300-150-N-5.00	CF275R	ASA300	1.50	\$195.00
5000837	CF338RXASA300-200-N-5.00	CF338R	ASA300	2.00	\$215.00
5000839	CF450RXASA300-250-N-5.00	CF450R	ASA300	2.50	\$230.00
5000841	CF462RXASA300-300-N-5.00	CF462R	ASA300	3.00	\$240.00
5000843	CF133RXASA400-075-N-5.00	CF133R	ASA400	0.75	\$225.00
5000845	CF212RXASA400-100-N-5.00	CF212R	ASA400	1.00	\$225.00
5000847	CF275RXASA400-150-N-5.00	CF275R	ASA400	1.50	\$225.00
5000849	CF338RXASA400-200-N-5.00	CF338R	ASA400	2.00	\$250.00
5000851	CF450RXASA400-250-N-5.00	CF450R	ASA400	2.50	\$270.00
5000853	CF462RXASA400-300-N-5.00	CF462R	ASA400	3.00	\$275.00
5000855	CF600RXASA400-400-N-5.00	CF600R	ASA400	4.00	\$290.00
5000857	CF133RXASA600-075-N-5.00	CF133R	ASA600	0.75	\$320.00
5000859	CF212RXASA600-100-N-5.00	CF212R	ASA600	1.00	\$325.00
5000861	CF275RXASA600-150-N-5.00	CF275R	ASA600	1.50	\$330.00
5000863	CF338RXASA600-200-N-5.00	CF338R	ASA600	2.00	\$350.00
5000865	CF450RXASA600-250-N-5.00	CF450R	ASA600	2.50	\$370.00

CF to ASA/ANSI Adapter Fitting (continued)

Materials:

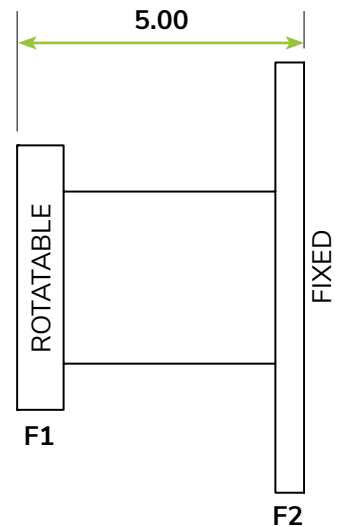
- 304 stainless steel

Product Notes:

- Adapts from CF to ASA/ANSI flanges for the same tubing diameter.

Options: Call for price and delivery

- Custom Flange Combinations and additional sizes
- Tee, Cross and Elbow adapter
- Order ASA/ANSI flanges with or without sealing groove



4 CF to ASA/ANSI Adapters

PART #	REFERENCE ID	FLANGE 1 TYPE	FLANGE 2 TYPE	TUBE O.D. (in)	UNIT PRICE
5000865	CF450RXASA600-250-N-5.00	CF450R	ASA600	2.50	\$370.00
5000867	CF462RXASA600-300-N-5.00	CF462R	ASA600	3.00	\$375.00
5000869	CF600RXASA600-400-N-5.00	CF600R	ASA600	4.00	\$390.00
5000871	CF800RXASA600-600-N-5.00	CF800R	ASA600	6.00	\$430.00
5000873	CF133RXASA800-075-N-5.00	CF133R	ASA800	0.75	\$410.00
5000875	CF212RXASA800-100-N-5.00	CF212R	ASA800	1.00	\$415.00
5000877	CF275RXASA800-150-N-5.00	CF275R	ASA800	1.50	\$420.00
5000879	CF338RXASA800-200-N-5.00	CF338R	ASA800	2.00	\$435.00
5000881	CF450RXASA800-250-N-5.00	CF450R	ASA800	2.50	\$455.00
5000883	CF462RXASA800-300-N-5.00	CF462R	ASA800	3.00	\$460.00
5000885	CF600RXASA800-400-N-5.00	CF600R	ASA800	4.00	\$475.00
5000887	CF800RXASA800-600-N-5.00	CF800R	ASA800	6.00	\$515.00
5000889	CF1000RXASA800-800-N-5.00	CF1000R	ASA800	8.00	\$710.00
5000891	CF133RXASA1000-075-N-5.00	CF133R	ASA1000	0.75	CALL
5000893	CF212RXASA1000-100-N-5.00	CF212R	ASA1000	1.00	CALL
5000895	CF275RXASA1000-150-N-5.00	CF275R	ASA1000	1.50	CALL
5000897	CF338RXASA1000-200-N-5.00	CF338R	ASA1000	2.00	CALL
5000899	CF450RXASA1000-250-N-5.00	CF450R	ASA1000	2.50	CALL
5000901	CF462RXASA1000-300-N-5.00	CF462R	ASA1000	3.00	CALL
5000903	CF600RXASA1000-400-N-5.00	CF600R	ASA1000	4.00	CALL
5000905	CF800RXASA1000-600-N-5.00	CF800R	ASA1000	6.00	CALL
5000907	CF1000RXASA1000-800-N-5.00	CF1000R	ASA1000	8.00	CALL
5000909	CF1325RXASA1000-1000-N-5.00	CF1325R	ASA1000	10.00	CALL

CF to ASA/ANSI Conical Adapter

Materials:

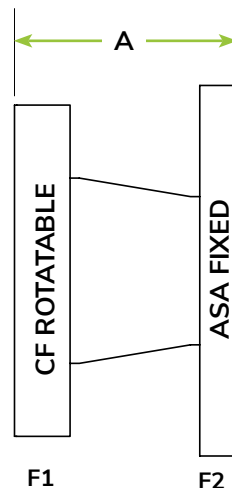
- 304 Stainless steel

Product Notes:

- Adapts from CF to ASA/ANSI flanges for different tubing diameters.

Options: Call for price and delivery

- Custom Flange Combinations and additional sizes
- Tee, Cross and Elbow adapter
- Order ASA/ANSI flanges with or without sealing groove



CF to ASA

PART #	REFERENCE ID	FLANGE 1 TYPE	FLANGE 1 TUBE O.D. (in)	FLANGE 2 TYPE	FLANGE 2 TUBE O.D. (in)	A (in)	UNIT PRICE
5000787	CF450RXASA150-250X200-CR-3.00	CF450R	2.50	ASA150	2.00	3.000	\$225.00
5000789	CF462RXASA150-300X200-CR-4.25	CF462R	3.00	ASA150	2.00	4.250	\$225.00
5000791	CF600RXASA150-400X200-CR-4.31	CF600R	4.00	ASA150	2.00	4.313	\$235.00
5000799	CF600RXASA200-400X300-CR-4.31	CF600R	4.00	ASA200	3.00	4.313	\$245.00

ASA/ANSI to CF Conical Adapter

Materials:

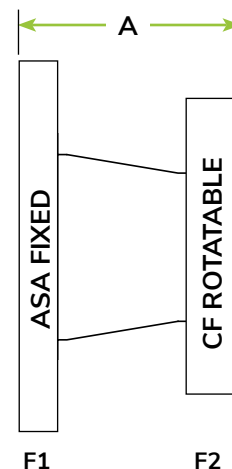
- 304 Stainless steel

Product Notes:

- Adapts from CF to ASA/ANSI flanges for different tubing diameters.

Options: Call for price and delivery

- Custom Flange Combinations and additional sizes
- Tee, Cross and Elbow adapter
- Order ASA/ANSI flanges with or without sealing groove



ASA to CF

PART #	REFERENCE ID	FLANGE 1 TYPE	FLANGE 1 TUBE O.D. (in)	FLANGE 2 TYPE	FLANGE 2 TUBE O.D. (in)	A (in)	UNIT PRICE
5000779	ASA100XCF133R-150X075-CR-2.91	ASA100	1.50	CF133R	0.75	2.91	\$155.00
5000781	ASA150XCF212R-200X100-CR-2.80	ASA150	2.00	CF212R	1.00	2.792	\$170.00
5000783	ASA150XCF275R-200X150-CR-2.83	ASA150	2.00	CF275R	1.50	2.834	\$175.00
5000785	ASA150XCF338R-250X200-CR-2.85	ASA150	2.50	CF338R	2.00	2.850	\$195.00
5000793	ASA200XCF275R-300X150-CR-4.08	ASA200	3.00	CF275R	1.50	4.084	\$180.00
5000795	ASA200XCF338R-300X200-CR-4.10	ASA200	3.00	CF338R	2.00	4.100	\$205.00
5000797	ASA200XCF450R-300X250-CR-4.25	ASA200	3.00	CF450R	2.50	4.250	\$220.00
5000801	ASA300XCF338R-400X200-CR-4.10	ASA300	4.00	CF338R	2.00	4.100	\$235.00
5000803	ASA300XCF450R-400X250-CR-4.25	ASA300	4.00	CF450R	2.50	4.250	\$250.00
5000805	ASA300XCF462R-400X300-CR-4.25	ASA300	4.00	CF462R	3.00	4.250	\$255.00

QF to ASA/ANSI Adapters

Materials:

- 304 stainless steel

Product Notes:

- Adapts from QF to ASA/ANSI flanges with the same tubing outer diameter.

Options: Call for price and delivery

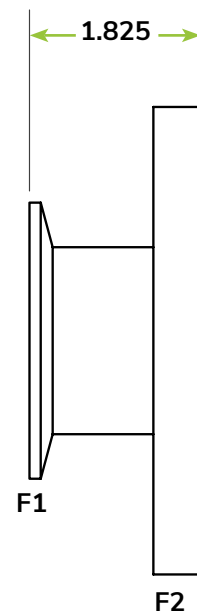
- Custom flange combinations and additional sizes
- Order ASA/ANSI flanges with or without sealing groove



4

QF to ASA/ANSI Adapters

PART #	REFERENCE ID	FLANGE 1 TYPE	FLANGE 2 TYPE	TUBE O.D. (in)	UNIT PRICE
6000376	QF16XASA100-075-N-1.83	QF16	ASA100	0.75	\$150.00
6000378	QF16XASA150-075-N-1.82	QF16	ASA150	0.75	\$160.00
6000380	QF16XASA200-075-N-1.82	QF16	ASA200	0.75	\$170.00
6000382	QF16XASA300-075-N-1.82	QF16	ASA300	0.75	\$225.00
6000384	QF16XASA400-075-N-1.82	QF16	ASA400	0.75	\$240.00
6000386	QF16XASA600-075-N-1.82	QF16	ASA600	0.75	\$335.00
6000388	QF25XASA200-100-N-1.82	QF25	ASA200	1.00	\$175.00
6000390	QF25XASA300-100-N-1.82	QF25	ASA300	1.00	\$230.00
6000392	QF25XASA400-100-N-1.82	QF25	ASA400	1.00	\$245.00
6000394	QF25XASA600-100-N-1.83	QF25	ASA600	1.00	\$340.00
6000396	QF40XASA150-150-N-1.83	QF40	ASA150	1.50	\$170.00
6000398	QF40XASA200-150-N-1.83	QF40	ASA200	1.50	\$180.00
6000400	QF40XASA300-150-N-1.82	QF40	ASA300	1.50	\$240.00
6000402	QF40XASA400-150-N-1.82	QF40	ASA400	1.50	\$250.00
6000404	QF40XASA600-150-N-1.82	QF40	ASA600	1.50	\$345.00
6000406	QF50XASA150-200-N-1.82	QF50	ASA150	2.00	\$175.00
6000408	QF50XASA200-200-N-1.83	QF50	ASA200	2.00	\$185.00
6000410	QF50XASA300-200-N-1.83	QF50	ASA300	2.00	\$245.00
6000412	QF50XASA400-200-N-1.83	QF50	ASA400	2.00	\$255.00
6000414	QF50XASA600-200-N-1.82	QF50	ASA600	2.00	\$355.00



O-Ring Groove Option

ANCORP ASA/ANSI flanged fittings come standard with a smooth flange face. The addition of an o-ring groove is a custom option. If you require a grooved flange the additional charge for this is detailed in this chart.

Please Note: Adding a groove is customizing this product and is no longer returnable.

REFERENCE ID	ADDITIONAL COST
ASA100	\$ 20.00
ASA150	\$ 20.00
ASA200	\$ 20.00
ASA300	\$ 35.00
ASA400	\$ 35.00
ASA600	\$ 50.00
ASA800	\$ 55.00
ASA1000	\$ 60.00

ASA/ANSI to QF Conical Adapters

Materials:

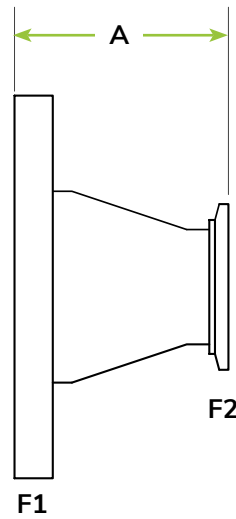
- 304 stainless steel

Product Notes:

- Adapts from QF to ASA/ANSI flanges for different tubing diameters.

Options: Call for price and delivery

- Custom flange combinations and additional sizes
- Order ASA/ANSI flanges with or without sealing groove



PART #	REFERENCE ID	FLANGE 1 TYPE	FLANGE 1 TUBE O.D. (in)	FLANGE 2 TYPE	FLANGE 2 TUBE O.D. (in)	A (in)	UNIT PRICE
6000466	ASA100XQF16-150X075-CR-2.80	ASA100	1.50	QF16	0.75	2.795	\$160.00
6000468	ASA150XQF16-150X075-CR-2.80	ASA150	1.50	QF16	0.75	2.795	\$170.00
6000470	ASA100XQF25-150X100-CR-2.80	ASA100	1.50	QF25	1.00	2.795	\$165.00
6000472	ASA150XQF25-150X100-CR-2.80	ASA150	1.50	QF25	1.00	2.795	\$175.00
6000474	ASA150XQF40-250X150-CR-2.80	ASA150	2.50	QF40	1.50	2.795	\$185.00
6000476	ASA200XQF40-300X150-CR-4.05	ASA200	3.00	QF40	1.50	4.045	\$215.00
6000478	ASA300XQF40-300X150-CR-4.03	ASA300	3.00	QF40	1.50	4.03	\$240.00
6000480	ASA150XQF50-250X200-CR-2.80	ASA150	2.50	QF50	2.00	2.795	\$200.00
6000482	ASA200XQF50-300X200-CR-4.05	ASA200	3.00	QF50	2.00	4.045	\$220.00
6000484	ASA300XQF50-300X200-CR-4.05	ASA300	4.00	QF50	2.00	4.045	\$265.00

4 QF to ASA/ANSI Adapters

LF to ASA/ANSI Adapter

Materials:

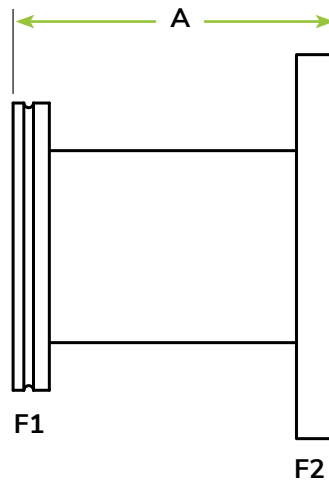
- 304 stainless steel

Product Notes:

- Adapts from LF to ASA/ANSI flanges with the same tubing outer diameter.

Options: Call for price and delivery

- Custom flange combinations and additional sizes
- Order ASA/ANSI flanges with or without sealing groove



4 LF to ASA/ANSI Adapters

PART #	REFERENCE ID	FLANGE 1 TYPE	FLANGE 2 TYPE	A (in)	TUBE O.D. (in)	UNIT PRICE
6000416	LF63XASA100-150-N-4.19	LF63	ASA100	4.19	1.50	\$215.00
6000418	LF63XASA150-250-N-4.19	LF63	ASA150	4.19	2.50	\$225.00
6000420	LF63XASA200-250-N-4.19	LF63	ASA200	4.19	2.50	\$260.00
6000422	LF80XASA100-150-N-4.19	LF80	ASA100	4.19	1.50	\$225.00
6000424	LF80XASA150-250-N-4.19	LF80	ASA150	4.19	2.50	\$255.00
6000426	LF80XASA200-300-N-4.19	LF80	ASA200	4.19	3.00	\$250.00
6000428	LF100XASA300-400-N-4.19	LF100	ASA300	4.19	4.00	\$395.00
6000430	LF100XASA400-400-N-4.19	LF100	ASA400	4.19	4.00	\$435.00
6000432	LF160XASA300-400-N-4.19	LF160	ASA300	4.19	4.00	\$445.00
6000434	LF160XASA400-600-N-4.19	LF160	ASA400	4.19	6.00	\$515.00
6000436	LF160XASA600-600-N-4.32	LF160	ASA600	4.32	6.00	\$630.00
6000438	LF200XASA300-400-N-4.19	LF200	ASA300	4.19	4.00	\$550.00
6000440	LF200XASA400-600-N-4.19	LF200	ASA400	4.19	6.00	\$570.00
6000442	LF200XASA600-800-N-4.32	LF200	ASA600	4.32	8.00	\$760.00

O-Ring Groove Option

ANCORP ASA/ANSI flanged fittings come standard with a smooth flange face. The addition of an o-ring groove is a custom option. If you require a grooved flange the additional charge for this is detailed in this chart.

Please Note: Adding a groove is customizing this product and is no longer returnable.

REFERENCE ID	ADDITIONAL COST
ASA100	\$ 20.00
ASA150	\$ 20.00
ASA200	\$ 20.00
ASA300	\$ 35.00
ASA400	\$ 35.00
ASA600	\$ 50.00
ASA800	\$ 55.00
ASA1000	\$ 60.00

LF to ASA/ANSI Conical Adapter

Materials:

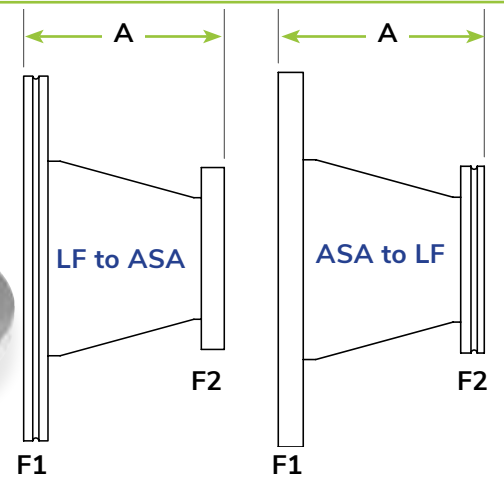
- 304 Stainless steel

Product Notes:

- Adapts from LF to ASA/ANSI flanges for different tubing diameters.

Options: Call for price and delivery

- Custom flange combinations and additional sizes
- Order ASA/ANSI flanges with or without sealing groove



LF to ASA

PART #	REFERENCE ID	FLANGE 1 TYPE	FLANGE 1 TUBE O.D. (in)	FLANGE 2 TYPE	FLANGE 2 TUBE O.D. (in)	A (in)	UNIT PRICE
6000444	LF63XASA100-250X150-CR-2.87	LF63	2.50	ASA100	1.50	2.875	\$240.00
6000452	LF80XASA100-300X150-CR-4.12	LF80	3.00	ASA100	1.50	4.125	\$275.00
6000454	LF80XASA150-300X200-CR-4.12	LF80	3.00	ASA150	2.00	4.125	\$285.00
6000456	LF80XASA200-300X250-CR-4.12	LF80	3.00	ASA200	2.50	4.125	\$295.00
6000460	LF100XASA150-400X200-CR-4.12	LF100	4.00	ASA150	2.00	4.125	\$280.00
6000462	LF100XASA200-400X300-CR-4.12	LF100	4.00	ASA200	3.00	4.125	\$295.00
6000464	LF100XASA300-400X300-CR-4.12	LF100	4.00	ASA300	3.00	4.125	\$325.00

ASA to LF

PART #	REFERENCE ID	FLANGE 1 TYPE	FLANGE 1 TUBE O.D. (in)	FLANGE 2 TYPE	FLANGE 2 TUBE O.D. (in)	A (in)	UNIT PRICE
6000446	LF63XASA150-250X200-CR-2.87	LF63	2.00	ASA150	2.50	2.875	\$250.00
6000448	LF63XASA200-300X250-CR-4.12	LF63	3.00	ASA200	2.50	4.125	\$260.00
6000450	LF63XASA300-400X250-CR-4.13	LF63	4.00	ASA300	2.50	4.125	\$300.00
6000458	LF80XASA300-400X300-CR-4.12	LF80	4.00	ASA300	3.00	4.125	\$340.00

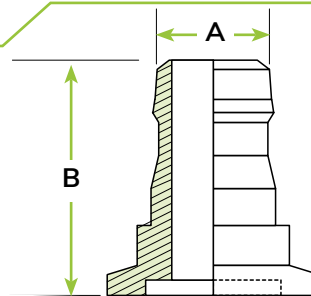
QF to Hose Adapter - Aluminum

Materials:

- 2011 aluminum

Product Notes:

- Adapts from ISO-QF flanges to rubber or PVC vacuum hose



PART #	REFERENCE ID	HOSE SIZE I.D. (in)	A (in)	B (in)	UNIT PRICE
4000257	QF16X50/63-HA-AL	0.50 or 0.63	0.63	1.63	\$10.50
4000258	QF16X63/75-HA-AL	0.63 or 0.75	0.75	1.63	\$10.50
4000259	QF25X50/63-HA-AL	0.50 or 0.63	0.63	1.63	\$17.00
4000261	QF25X75/88-HA-AL	0.75 or 0.88	0.88	1.73	\$13.00
4000262	QF40X150/163-HA-AL	1.50 or 1.63	1.63	2.17	\$18.00
4000263	QF50X150/163-HA-AL	1.50 or 1.63	1.63	2.17	\$24.00

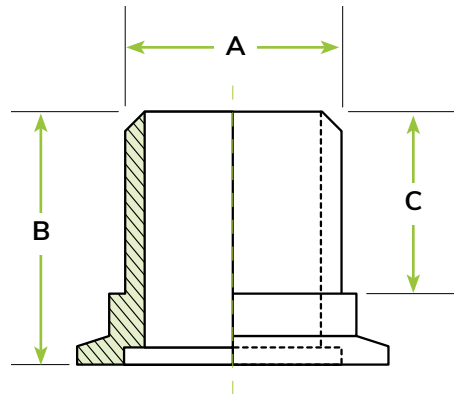
QF to Hose Adapter - Stainless Steel

Materials:

- 304 stainless steel

Product Notes:

- Adapts from ISO-QF flanges to rubber or PVC vacuum hose



PART #	REFERENCE ID	HOSE SIZE I.D. (in)	A (in)	B (in)	C (in)	UNIT PRICE
4000265	QF16X050-HA-SS	0.50	0.50	1.26	0.79	\$16.00
4000266	QF16X075-HA-SS	0.75	0.75	1.26	0.79	\$16.00
4000267	QF25X100-HA-SS	1.00	1.00	1.50	1.02	\$21.00
4000268	QF40X150-HA-SS	1.50	1.50	1.97	1.50	\$25.00
4000269	QF50X200-HA-SS	2.00	2.00	2.17	1.61	\$32.00

CF to NPT Female Zero Length Reducer Flange

Product Features:

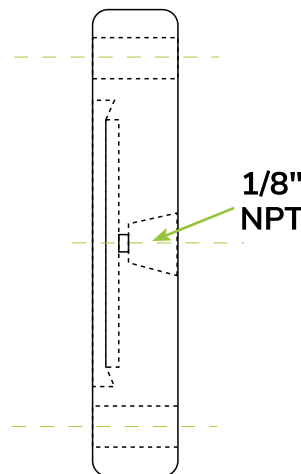
- Ideal for adding vacuum accessories (vacuum measurement, valves, etc.) or gas lines to your system.
- Use standard CF gaskets to seal
- Self-aligning
- Female NPT
- Interchangeable with other ConFlat® style flanges

Product Specifications:

- Pressure range: UHV
- Temperature range: -200°C up to 450°C
- Standard materials: 304 grade stainless steel

Options: Call for price and availability

- Tapped bolt holes
- Alternative materials: 316 stainless steel



PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
5000208	CF133XFNPT12-0.300	1.33 Flange - (1) 0.125 in. NPT Hole	\$50.00
5000209	CF275XFNPT12-0.500	2.75 Flange - (1) 0.125 in. NPT Hole	\$67.00

CF to NPT Female Double Sided Flange – Side Port(s)

Product Features:

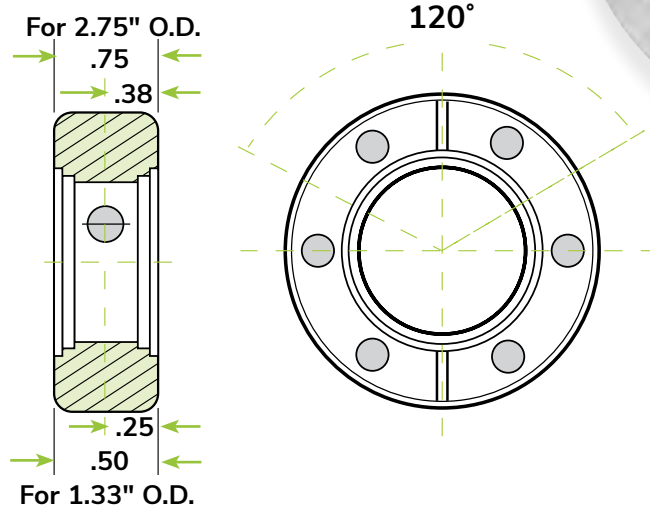
- Ideal for adding vacuum accessories (vacuum measurement, valves, etc.) or gas lines to your system.
- Requires special CF double sided flange bolt kit for fastening
- Use standard CF gaskets to seal
- Self-aligning
- Sexless flanges
- Interchangeable with other ConFlat® style flanges

Product Specifications:

- Pressure range: UHV (approx. 1×10^{-13} Torr)
- Temperature range: -200°C up to 450°C
- Standard materials: 304 stainless steel

Options: Call for price and availability

- Tapped bolt holes
- Alternative materials: 316 stainless steel



4
CF to NPT Adapters

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
5000220	CF133DXFNPT06-SPC	1.33 Flange - (1) 0.0625 in. NPT Hole	\$91.00
5000221	CF275DXFNPT12-SPC	2.75 Flange - (1) 0.125 in. NPT Hole	\$78.00
5000222	CF133DXFNPT06-2X-SPC	1.33 Flange - (2) 0.0625 in. NPT Holes	\$110.00
5000223	CF275DXFNPT12-2X-SPC	2.75 Flange - (2) 0.125 in. NPT Holes	\$130.00

QF to NPT Female Adapters

Materials:

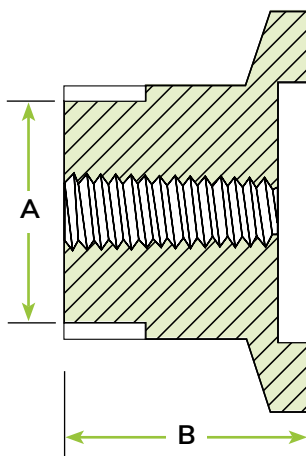
- 304 stainless steel or aluminum

Product Notes:

- Adapts from ISO-QF to NPT fitting

Options: Call for price and delivery

- Additional sizes



ORDERING NOTE:

For ISO-QF to NPT male fittings see pg. 19

Stainless Steel

PART #	REFERENCE ID	A (in)	B (in)	UNIT PRICE
4000191	QF16XFPNT12-0.750	0.62	0.75	\$40.00
4000192	QF16XFPNT25-0.750	0.62	0.75	\$43.00
4000193	QF25XFNPT12-0.750	0.88	0.75	\$41.00
4000194	QF25XFNPT25-0.750	0.88	0.75	\$44.00
4000195	QF40XFNPT12-1.000	1.25	1.00	\$44.00
4000196	QF40XFNPT25-1.000	1.25	1.00	\$47.00
4000197	QF50XFNPT12-1.000	1.75	1.00	\$49.00
4000198	QF50XFNPT25-1.000	1.75	1.00	\$52.00

Aluminum

PART #	REFERENCE ID	A (in)	B (in)	UNIT PRICE
4000201	QF16XFNPT12-0.750-AL	0.62	0.75	\$48.00
4000202	QF16XFNPT25-0.750-AL	0.62	0.75	\$52.00
4000203	QF25XFNPT12-0.750-AL	0.88	0.75	\$50.00
4000204	QF25XFNPT25-0.750-AL	0.88	0.75	\$53.00
4000205	QF40XFNPT12-1.000-AL	1.25	1.00	\$53.00
4000206	QF40XFNPT25-1.000-AL	1.25	1.00	\$57.00
4000207	QF50XFNPT12-1.000-AL	1.75	1.00	\$59.00
4000208	QF50XFNPT25-1.000-AL	1.75	1.00	\$63.00

QF Tee to NPT Female Adapters

Materials:

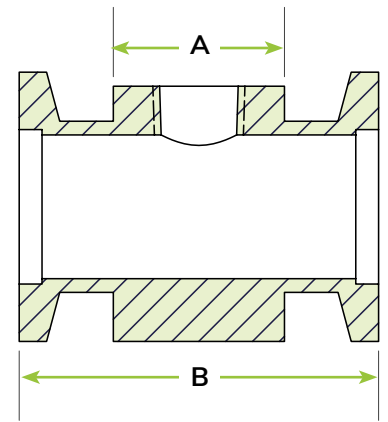
- 304 stainless steel or aluminum

Product Notes:

- Adapts from ISO-QF nipple fitting to side port of NPT fitting

Options: Call for price and delivery

- Additional sizes



Stainless Steel

PART #	REFERENCE ID	A (in)	B (in)	UNIT PRICE
4000219	QF16XFNPT12-TEE-1.575	0.76	1.57	\$68.00
4000220	QF16XFNPT25-TEE-1.575	0.76	1.57	\$72.00
4000221	QF25XFNPT12-TEE-1.575	0.76	1.57	\$72.00
4000222	QF25XFNPT25-TEE-1.575	0.76	1.57	\$76.00
4000223	QF40XFNPT12-TEE-1.575	0.76	1.57	\$84.00
4000224	QF40XFNPT25-TEE-1.575	0.76	1.57	\$85.00
4000225	QF50XFNPT12-TEE-1.575	0.76	1.57	\$94.00
4000226	QF50XFNPT25-TEE-1.575	0.76	1.57	\$96.00

Aluminum

PART #	REFERENCE ID	A (in)	B (in)	UNIT PRICE
4000227	QF16XFNPT12-TEE-1.575-AL	0.76	1.57	\$60.00
4000228	QF16XFNPT25-TEE-1.575-AL	0.76	1.57	\$61.00
4000229	QF25XFNPT12-TEE-1.575-AL	0.76	1.57	\$63.00
4000230	QF25XFNPT25-TEE-1.575-AL	0.76	1.57	\$64.00
4000231	QF40XFNPT12-TEE-1.575-AL	0.76	1.57	\$69.00
4000232	QF40XFNPT25-TEE-1.575-AL	0.76	1.57	\$70.00
4000233	QF50XFNPT12-TEE-1.575-AL	0.76	1.57	\$82.00
4000234	QF50XFNPT25-TEE-1.575-AL	0.76	1.57	\$84.00

QF to NPT Male

Product Notes:

- Adapts from ISO-QF flange to NPT fitting

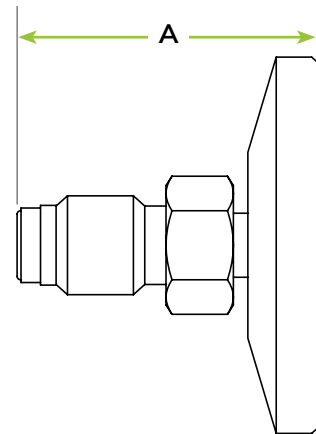
Materials:

- 304 stainless steel

Options:

Call for price and delivery

- Additional sizes



4 QF To NPT Adapters

PART #	REFERENCE ID	FLANGE	FITTING	A (in)	UNIT PRICE
4000235	QF16XMNPT12-0.88	QF16	0.125 in. NPT	0.88	\$48.00
4000236	QF16XMNPT25-1.09	QF16	0.25 in. NPT	1.09	\$48.00
4000237	QF25XMNPT12-0.88	QF25	0.125 in. NPT	0.88	\$49.00
4000238	QF25XMNPT25-1.09	QF25	0.25 in. NPT	1.09	\$54.00
4000239	QF25XMNPT50-1.34	QF25	0.50 in. NPT	1.34	\$65.00
4000240	QF25XMNPT75-1.34	QF25	0.75 in. NPT	1.34	\$81.00
4000241	QF25XMNPT100-1.63	QF25	1.00 in. NPT	1.63	\$105.00
4000242	QF40XMNPT12-0.88	QF40	0.125 in. NPT	0.88	\$54.00
4000243	QF40XMNPT25-1.09	QF40	0.25 in. NPT	1.09	\$55.00
4000244	QF40XMNPT50-1.34	QF40	0.50 in. NPT	1.34	\$66.00
4000245	QF40XMNPT75-1.34	QF40	0.75 in. NPT	1.34	\$85.00
4000246	QF40XMNPT100-1.63	QF40	1.00 in. NPT	1.63	\$105.00
4000249	QF50XMNPT12-0.88	QF50	0.125 in. NPT	0.88	\$60.00
4000250	QF50XMNPT25-1.09	QF50	0.25 in. NPT	1.09	\$60.00
4000251	QF50XMNPT50-1.34	QF50	0.50 in. NPT	1.34	\$69.00
4000252	QF50XMNPT75-1.34	QF50	0.75 in. NPT	1.34	\$94.00
4000253	QF50XMNPT100-1.63	QF50	1.00 in. NPT	1.63	\$110.00

CF to VCR® Female

Materials:

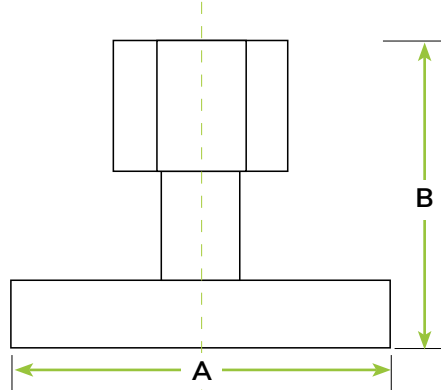
- CF flange: 304 stainless steel
- VCR® fitting: 316 stainless steel

Product Notes:

- Adapts from CF flange to VCR® fitting

Options: Call for price and delivery

- Additional sizes



PART #	REFERENCE ID	FLANGE TYPE	TUBE O.D. (in)	A (in)	LENGTH B (in)	UNIT PRICE
5000633	CF133XFVCR25-1.91	CF133	0.25	1.33	1.905	\$63.00
5000634	CF133XFVCR38-2.21	CF133	0.38	1.33	2.209	\$70.00
5000635	CF275XFVCR25-2.11	CF275	0.25	2.75	2.106	\$68.00
5000636	CF275XFVCR38-2.27	CF275	0.38	2.75	2.268	\$75.00
5000637	CF275XFVCR50-2.21	CF275	0.50	2.75	2.209	\$75.00

4 CF to VCR® Adapters

CF to VCR® Male

Materials:

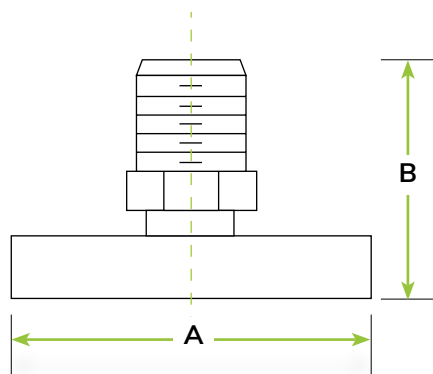
- CF flange: 304 stainless steel
- VCR® fitting: 316 stainless steel

Product Notes:

- Adapts from CF flange to VCR® fitting

Options: Call for price and delivery

- Additional sizes



PART #	REFERENCE ID	FLANGE TYPE	TUBE O.D. (in)	A (in)	LENGTH B (in)	UNIT PRICE
5000627	CF133XMVCR25-1.41	CF133	0.25	1.33	1.406	\$62.00
5000628	CF133XMVCR38-1.65	CF133	0.38	1.33	1.65	\$67.00
5000629	CF275XMVCR25-1.41	CF275	0.25	2.75	1.411	\$67.00
5000630	CF275XMVCR38-1.71	CF275	0.38	2.75	1.709	\$72.00
5000631	CF275XMVCR50-1.90	CF275	0.50	2.75	1.875	\$84.00

QF to VCR® Female

Materials:

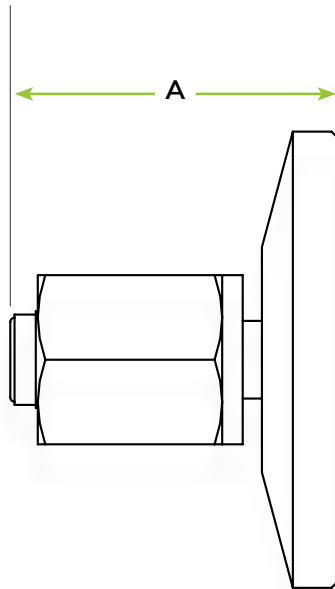
- QF flange: 304 stainless steel
- VCR® Fitting: 316 stainless steel

Product Notes:

- Adapts from ISO-QF flange to VCR® fitting

Options: Call for price and delivery

- Additional sizes



4 QF to VCR® Female Adapters

PART #	REFERENCE ID	TUBE O.D. (in)	FLANGE TYPE	A (in)	UNIT PRICE
4000270	QF16XFVCR12-0.85	0.12	QF16	0.85	\$52.00
4000271	QF16XFVCR25-1.46	0.25	QF16	1.46	\$56.00
4000272	QF16XFVCR38-1.65	0.38	QF16	1.65	\$78.00
4000273	QF16XFVCR50-1.65	0.50	QF16	1.65	\$85.00
4000274	QF25XFVCR12-0.85	0.12	QF25	0.85	\$57.00
4000275	QF25XFVCR25-1.36	0.25	QF25	1.36	\$61.00
4000276	QF25XFVCR38-1.55	0.38	QF25	1.55	\$78.00
4000277	QF25XFVCR50-1.55	0.50	QF25	1.55	\$83.00
4000278	QF25XFVCR75-2.15	0.75	QF25	2.15	\$125.00
4000279	QF25XFVCR100-2.37	1.00	QF25	2.37	\$145.00
4000280	QF40XFVCR12-0.85	0.12	QF40	0.85	\$63.00
4000281	QF40XFVCR25-1.36	0.25	QF40	1.36	\$67.00
4000282	QF40XFVCR38-1.55	0.38	QF40	1.55	\$82.00
4000283	QF40XFVCR50-1.55	0.50	QF40	1.55	\$88.00
4000284	QF40XFVCR75-2.15	0.75	QF40	2.15	\$130.00
4000285	QF40XFVCR100-2.37	1.00	QF40	2.37	\$150.00
4000286	QF50XFVCR12-0.85	0.12	QF50	0.85	\$78.00
4000287	QF50XFVCR25-1.36	0.25	QF50	1.36	\$91.00
4000288	QF50XFVCR38-1.55	0.38	QF50	1.55	\$85.00
4000289	QF50XFVCR50-1.55	0.50	QF50	1.55	\$91.00
4000290	QF50XFVCR75-2.15	0.75	QF50	2.15	\$135.00
4000291	QF50XFVCR100-2.37	1.00	QF50	2.37	\$155.00

QF to VCR® Male

Materials:

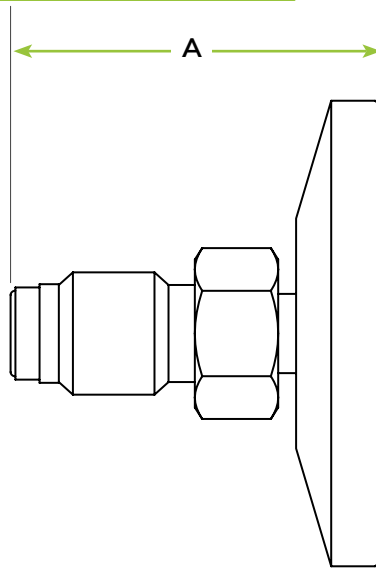
- QF flange: 304 stainless steel
- VCR® Fitting: 316 stainless steel

Product Notes:

- Adapts from ISO-QF flange to VCR® fitting

Options: Call for price and delivery

- Additional sizes



PART #	REFERENCE ID	TUBE O.D. (in)	FLANGE TYPE	A (in)	UNIT PRICE
4000292	QF16XMVCR12-0.85	0.12	QF16	0.85	\$52.00
4000293	QF16XMVCR25-1.46	0.25	QF16	1.46	\$56.00
4000294	QF16XMVCR38-1.65	0.38	QF16	1.65	\$78.00
4000295	QF16XMVCR50-1.55	0.50	QF16	1.55	\$81.00
4000296	QF25XMVCR12-1.05	0.12	QF25	1.05	\$57.00
4000297	QF25XMVCR25-1.36	0.25	QF25	1.36	\$61.00
4000298	QF25XMVCR38-1.55	0.38	QF25	1.55	\$78.00
4000299	QF25XMVCR50-1.55	0.50	QF25	1.55	\$83.00
4000300	QF25XMVCR75-2.15	0.75	QF25	2.15	\$125.00
4000301	QF25XMVCR100-2.37	1.00	QF25	2.37	\$150.00
4000302	QF40XMVCR12-0.85	0.12	QF40	0.85	\$63.00
4000303	QF40XMVCR25-1.36	0.25	QF40	1.36	\$67.00
4000304	QF40XMVCR38-1.55	0.38	QF40	1.55	\$82.00
4000305	QF40XMVCR50-1.55	0.50	QF40	1.55	\$88.00
4000306	QF40XMVCR75-2.15	0.75	QF40	2.15	\$130.00
4000307	QF40XMVCR100-2.37	1.00	QF40	2.37	\$150.00
4000308	QF50XMVCR12-0.85	0.12	QF50	0.85	\$68.00
4000309	QF50XMVCR25-1.36	0.25	QF50	1.36	\$71.00
4000310	QF50XMVCR38-1.55	0.38	QF50	1.55	\$85.00
4000311	QF50XMVCR50-1.55	0.50	QF50	1.55	\$91.00
4000312	QF50XMVCR75-2.15	0.75	QF50	2.15	\$135.00
4000313	QF50XMVCR100-2.37	1.00	QF50	2.37	\$155.00

CF to Swagelok®

Materials:

- CF flange: 304 stainless steel
- Swagelok® fitting: 316 stainless steel

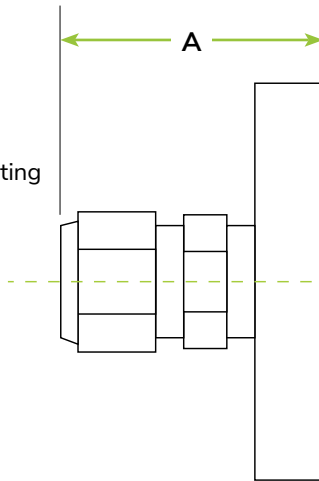
Product Notes:

- Adapts from CF flange to Swagelok® fitting

Options:

Call for price and delivery

- Additional sizes



4 CF to Swagelok® Adapters

PART #	REFERENCE ID	FLANGE TYPE	TUBE O.D. (in)	A (in)	UNIT PRICE
5000619	CF133XSWG25-1.70	CF133	0.250	1.70	\$68.00
5000620	CF133XSWG38-1.72	CF133	0.375	1.72	\$75.00
5000621	CF133XSWG50-1.80	CF133	0.500	1.80	\$87.00
5000622	CF275XSWG25-1.64	CF275	0.250	1.64	\$75.00
5000623	CF275XSWG38-1.78	CF275	0.375	1.78	\$81.00
5000624	CF275XSWG50-2.18	CF275	0.500	2.18	\$81.00
5000625	CF275XSWG75-2.20	CF275	0.750	2.20	\$140.00
5000626	CF275XSWG100-2.60	CF275	1.000	2.60	\$160.00

ISO-QF to Swagelok®

Materials

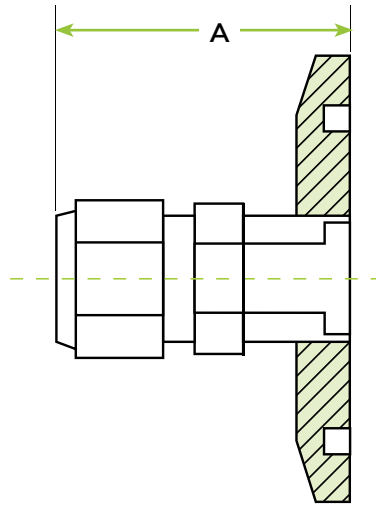
- QF flange: 304 stainless steel
- Swagelok® fitting: 316 stainless steel

Product Notes:

- Adapts from ISO-QF flange to Swagelok® fitting

Options: Call for price and delivery

- Additional sizes



4

ISO-QF to Swagelok® Adapters

PART #	REFERENCE ID	FLANGE TYPE	TUBE O.D. (in)	A (in)	UNIT PRICE
4000314	QF16XSWG12-1.28	QF16	0.12	1.28	\$55.00
4000315	QF16XSWG25-1.53	QF16	0.25	1.53	\$59.00
4000316	QF16XSWG38-1.68	QF16	0.38	1.68	\$66.00
4000317	QF16XSWG50-1.98	QF16	0.50	1.98	\$82.00
4000318	QF25XSWG12-1.275	QF25	0.12	1.28	\$61.00
4000319	QF25XSWG25-1.53	QF25	0.25	1.53	\$64.00
4000320	QF25XSWG38-1.63	QF25	0.38	1.63	\$75.00
4000321	QF25XSWG50-2.08	QF25	0.50	2.08	\$82.00
4000322	QF25XSWG75-2.08	QF25	0.75	2.08	\$130.00
4000323	QF25XSWG100-2.88	QF25	1.00	2.88	\$150.00
4000324	QF40XSWG12-1.28	QF40	0.12	1.28	\$66.00
4000325	QF40XSWG25-1.53	QF40	0.25	1.53	\$70.00
4000326	QF40XSWG38-1.71	QF40	0.38	1.71	\$81.00
4000327	QF40XSWG50-1.97	QF40	0.50	1.97	\$87.00
4000328	QF40XSWG75-2.08	QF40	0.75	2.08	\$135.00
4000329	QF40XSWG100-2.53	QF40	1.00	2.53	\$160.00
4000330	QF50XSWG12-1.28	QF50	0.12	1.28	\$72.00
4000331	QF50XSWG25-1.53	QF50	0.25	1.53	\$75.00
4000332	QF50XSWG38-1.63	QF50	0.38	1.63	\$86.00
4000333	QF50XSWG50-1.97	QF50	0.50	1.97	\$93.00
4000334	QF50XSWG75-2.08	QF50	0.75	2.08	\$140.00
4000335	QF50XSWG100-2.53	QF50	1.00	2.53	\$165.00

CF to Quick Disconnect Adapters

Materials:

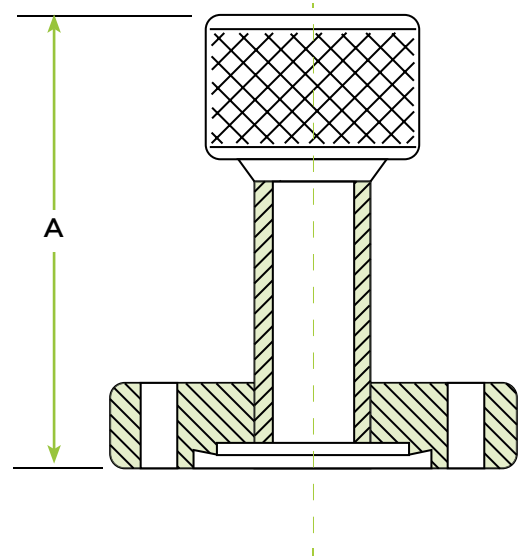
- Standard: 304 stainless steel

Product Notes:

- Adapts from CF flange to quick disconnect fitting
- Convenient for mounting gauges, instruments or adding tube ports without welds

Options: Call for price and delivery

- Additional sizes



PART #	REFERENCE ID	FLANGE	FOR TUBE SIZE (in)	A (in)	UNIT PRICE
5000596	CF133XQD06-1.39	CF133	1/16	1.312	\$95.00
5000597	CF133XQD12-1.36	CF133	1/8	1.312	\$90.00
5000598	CF133XQD18-1.36	CF133	3/16	1.312	\$90.00
5000599	CF133XQD25-1.31	CF133	1/4	1.312	\$91.00
5000600	CF133XQD31-1.38	CF133	5/16	1.387	\$91.00
5000601	CF133XQD38-1.36	CF133	3/8	1.363	\$91.00
5000602	CF133XQD50-1.38	CF133	1/2	1.380	\$94.00
5000603	CF133XQD62-1.47	CF133	5/8	1.471	\$99.00
5000604	CF275XQD06-1.31	CF275	1/16	1.313	\$110.00
5000605	CF275XQD12-1.42	CF275	1/8	1.417	\$94.00
5000606	CF275XQD18-1.36	CF275	3/16	1.363	\$94.00
5000607	CF275XQD25-1.31	CF275	1/4	1.312	\$95.00
5000608	CF275XQD31-1.36	CF275	5/16	1.363	\$95.00
5000609	CF275XQD38-1.36	CF275	3/8	1.363	\$95.00
5000610	CF275XQD50-1.38	CF275	1/2	1.376	\$99.00
5000611	CF275XQD62-1.50	CF275	5/8	1.500	\$105.00
5000612	CF275XQD75-1.63	CF275	3/4	1.625	\$105.00
5000613	CF275XQD87-1.84	CF275	7/8	1.839	\$110.00
5000614	CF275XQD100-2.0	CF275	1	2.000	\$115.00
5000615	CF275XQD112-1.99	CF275	1 1/8	1.994	\$130.00
5000616	CF275XQD125-2.21	CF275	1 1/4	2.213	\$140.00
5000617	CF275XQD138-2.34	CF275	1 3/8	2.339	\$155.00
5000618	CF275XQD150-2.46	CF275	1 1/2	2.464	\$165.00

4 CF to Quick Disconnect Adapters

QF to Quick Disconnect Adapters

Materials:

- Standard: 304 stainless steel

Product Notes:

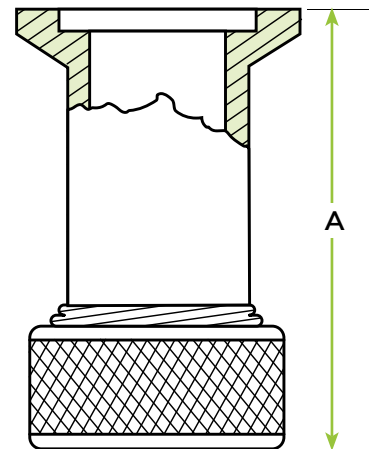
- Adapts from ISO-QF flange to quick disconnect fitting
- Convenient for mounting gauges, instruments or adding tube ports without welds

Options: Call for price and delivery

- Additional sizes



PART #	REFERENCE ID	FOR TUBE SIZE (in)	A (in)	UNIT PRICE
1000002	QF16XQD25-1.15	1/4	1.15	\$58.00
1000003	QF16XQD50-1.51	1/2	1.505	\$66.00
1000004	QF16XQD75-1.81	3/4	1.805	\$73.00
1000005	QF25XQD50-1.51	1/2	1.500	\$70.00
1000006	QF25XQD62-1.66	5/8	1.655	\$71.00
1000007	QF25XQD75-1.81	3/4	1.800	\$74.00
1000008	QF25XQD100-2.01	1	2.000	\$88.00
1000009	QF25XQD112-2.01	1 1/8	2.000	\$96.00
1000010	QF40XQD50-1.51	1/2	1.500	\$75.00
1000011	QF40XQD75-1.81	3/4	1.800	\$79.00
1000012	QF40XQD100-2.01	1	2.000	\$105.00
1000013	QF40XQD112-2.01	1 1/8	2.000	\$120.00
1000014	QF40XQD125-2.16	1 1/4	2.155	\$150.00
1000015	QF40XQD138-2.28	1 3/8	2.28	\$165.00
1000016	QF40XQD150-2.32	1 1/2	2.32	\$175.00
1000023	QF50XQD75-1.78	1/2	1.467	\$85.00
1000018	QF50XQD100-1.96	3/4	1.780	\$91.00
1000019	QF50XQD112-1.83	1	1.955	\$120.00
1000020	QF50XQD150-2.40	1 1/8	1.825	\$135.00
1000021	QF50XQD200-2.38	1 1/2	2.400	\$190.00
1000022	QF50XQD50-1.47	2	2.375	\$205.00



4 QF to Quick Disconnect Adapters

CF to Baseplate Fitting

Materials:

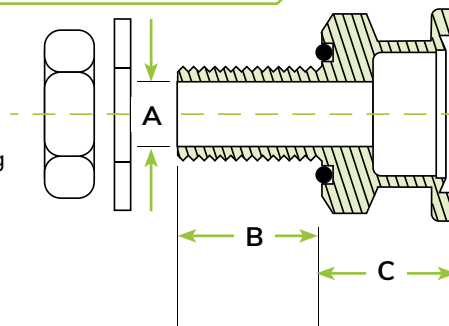
- 304 stainless steel

Product Notes:

- Adapts from CF flange to baseplate fitting
- Baseplate fitting designed to fit through 1 inch diameter ports on baseplates up to 1 inch thick

Options: Call for price and delivery

- Additional sizes



PART #	REFERENCE ID	A (in)	B (in)	C (in)	UNIT PRICE
2000065	CF212XBP100-075-3.00	0.75	1.620	1.28	\$205.00
2000066	CF275XBP100-075-2.90	0.75	1.620	1.28	\$220.00

QF to Baseplate Fitting

Materials:

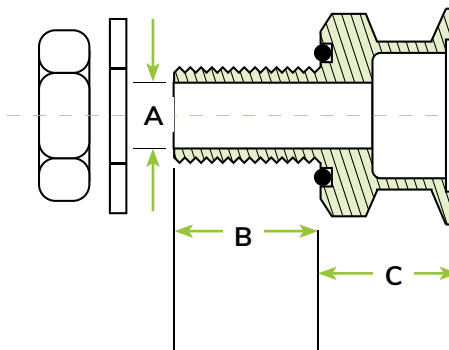
- 304 stainless steel

Product Notes:

- Adapts from ISO-QF flange to baseplate fitting
- Baseplate fitting designed to fit through 1 inch diameter ports on baseplates up to 1 inch thick

Options: Call for price and delivery

- Additional sizes



PART #	REFERENCE ID	A (in)	B (in)	C (in)	UNIT PRICE
2000060	QF25XBP100-075-2.90	0.75	1.620	1.28	\$180.00
2000061	QF40XBP100-075-2.90	0.75	1.620	1.28	\$195.00

NPT Female to Baseplate Fitting

Materials:

- 304 stainless steel
- Aluminium

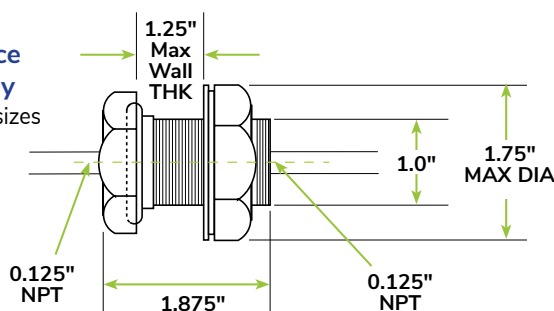
Product Notes:

- Adapts from NPT female fitting to baseplate fitting
- Baseplate fitting designed to fit 1 inch diameter ports on baseplates up to 1 inch thick

Options:

Call for price and delivery

- Additional sizes



PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
2000005	BP100XFNPT12-1.875-AL	Baseplate Fitting to 0.125 in. Female NPT-Aluminum	\$135.00
2000006	BP100XFNPT12-1.875	Baseplate Fitting to 0.125 in. Female NPT-Stainless Steel	\$160.00

Baseplate Fitting to Quick Disconnect

Materials:

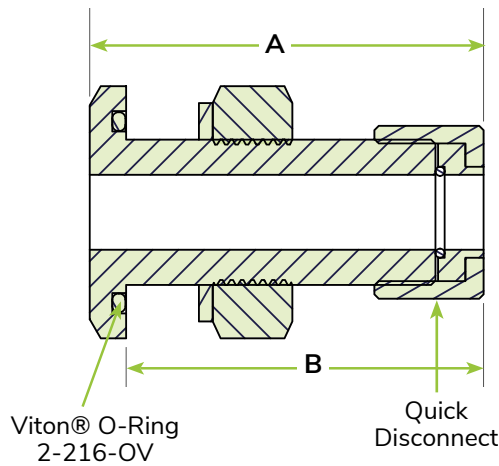
- 304 stainless steel
- Aluminium

Product Notes:

- Adapts from baseplate fitting to quick disconnect fitting
- Baseplate fitting designed to fit 1 inch diameter ports on baseplates up to 1 1/4 inch thick
- Convenient for mounting gauges, instruments or adding tube ports without welds

Options: Call for price and delivery

- Additional sizes



Stainless Steel

PART #	REFERENCE ID	FOR TUBE SIZE (in)	A (in)	B (in)	UNIT PRICE
2000050	BP100XQD12-2.62	1/8	2.62	2.37	\$260.00
2000051	BP100XQD25-2.62	1/4	2.62	2.37	\$260.00
2000052	BP100XQD38-2.62	3/8	2.62	2.37	\$260.00
2000053	BP100XQD50-2.62	1/2	2.62	2.37	\$260.00
2000054	BP100XQD62-2.62	5/8	2.62	2.37	\$260.00
2000055	BP100XQD75-2.62	3/4	2.62	2.37	\$260.00
2000057	BP100XQD100-4.25	1	4.25	2.37	\$330.00

Aluminum

PART #	REFERENCE ID	FOR TUBE SIZE (in)	A (in)	B (in)	UNIT PRICE
2000035	BP100XQD12-2.62-AL	1/8	2.62	2.37	\$220.00
2000036	BP100XQD25-2.62-AL	1/4	2.62	2.37	\$220.00
2000037	BP100XQD38-2.62-AL	3/8	2.62	2.37	\$220.00
2000038	BP100XQD50-2.62-AL	1/2	2.62	2.37	\$220.00
2000039	BP100XQD62-2.62-AL	5/8	2.62	2.37	\$220.00
2000040	BP100XQD75-2.62-AL	3/4	2.62	2.37	\$220.00
2000045	BP100XQD100-4.25-AL	1	4.25	2.37	\$285.00

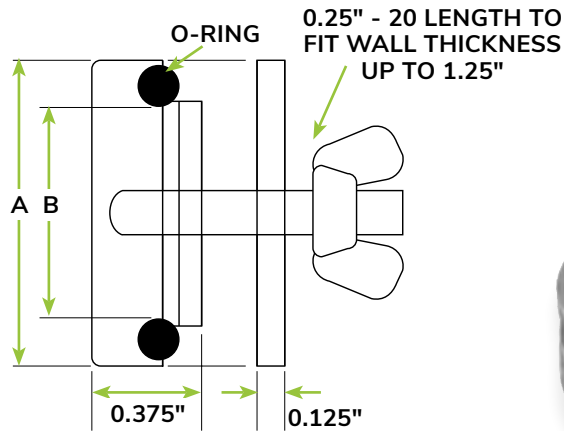
Baseplate Fitting Blank Plug

Materials:

- 304 stainless steel or aluminum

Product Notes:

- Close unused baseplate ports
- Baseplate plugs designed to fit through 1 inch diameter ports on baseplates up to 1 inch thick



PART #	REFERENCE ID	A (in)	B (in)	O-RING	DESCRIPTION	UNIT PRICE
2000025	FTB-075	1.50	0.74	2-216	Blank Stainless Steel Baseplate Plug w/0.75 in. Hole	\$66.00
2000026	FTB-100	1.50	0.99	2-216	Blank Stainless Steel Baseplate Plug w/1.00 in. Hole	\$66.00
2000027	FTB-125	1.75	1.24	2-220	Blank Stainless Steel Baseplate Plug w/1.25 in. Hole	\$105.00
2000028	FTB-150	2.00	1.49	2-223	Blank Stainless Steel Baseplate Plug w/1.50 in. Hole	\$120.00
2000029	FTB-175	2.25	1.74	2-225	Blank Stainless Steel Baseplate Plug w/1.75 in. Hole	\$135.00
2000010	FTB-100-AL	1.50	0.99	2-216	Blank Aluminum Baseplate Plug w/1.00 in. Hole	\$39.00

QF to Welch Pump Adapter

Materials:

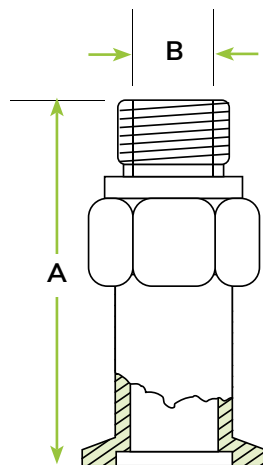
- 304 stainless steel

Product Notes:

- Adapts from ISO-QF flange to Welch Pump fitting
- Aluminum washer included

Options: Call for price and delivery

- Additional sizes



PART #	REFERENCE ID	FOR USE WITH WELCH PUMP NO.	A (in)	B (in)	UNIT PRICE
4000380	QF16XWP1-075-1.77	1399, 1400, 1410	1.77	0.75	\$95.00
4000381	QF16XWP2-075-2.56	1405	2.56	0.58	\$105.00
4000382	QF25XWP1-075-2.76	1380, 1402, 1403, 8806, 8811, 8816, 8821	2.76	0.75	\$135.00
4000383	QF40XWP1-150-2.56	1373, 1376, 8831	2.56	1.50	\$165.00
4000384	QF40XWP2-150-2.57	1374, 1397, 8851	2.56	1.50	\$165.00

4 Blank Plug / Welch Pump Adapter

QF to Ball Socket Fitting

Materials:

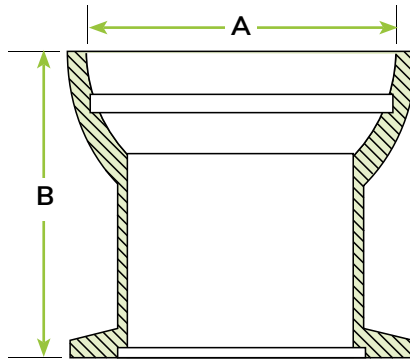
- 304 stainless steel

Product Notes:

- Adapts from ISO-QF flange to ball socket fitting
- Available with and without O-ring groove

Options: Call for price and delivery

- Additional sizes



Smooth Socket

PART #	REFERENCE ID	A (in)	B (in)	UNIT PRICE
4000390	QF40X50/30BS	2.00	2.75	\$135.00
4000392	QF50X75/50BS	3.00	3.27	\$195.00

Socket with O-Ring Groove

PART #	REFERENCE ID	O-RING SIZE	A (in)	B (in)	UNIT PRICE
4000391	QF40X50/30BSG	2-224	2.00	2.75	\$135.00
4000393	QF50X75/50BSG	2-232	3.00	3.27	\$215.00

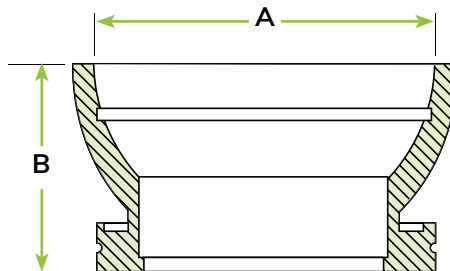
LF to Ball Socket Fitting

Materials:

- 304 stainless steel

Product Notes:

- Adapts from ISO-LF flange to ball socket fitting
- Available with and without O-ring groove



Smooth Socket

PART #	REFERENCE ID	A (in)	B (in)	UNIT PRICE
4500201	LF63X102/75BS	3.98	2.25	\$275.00
4500202	LF80X102/75BS	3.98	2.25	\$285.00
4500203	LF100X102/75BS	3.98	2.25	\$300.00

Options: Call for price and delivery

- Additional sizes

Socket with O-Ring Groove

PART #	REFERENCE ID	O-RING SIZE	A (in)	B (in)	UNIT PRICE
4500204	LF63X102/75BSG	2-240	3.98	2.25	\$325.00
4500205	LF80X102/75BSG	2-240	3.98	2.25	\$335.00
4500206	LF100X102/75BSG	2-240	3.98	2.25	\$350.00

Up-to-Air Valves

Installation of an **ANCORP** up-to-air valve allows you to vent your chamber to atmosphere or backfill your chamber with the gas of your choice. Up-to-air valves are available in two mounting options: center or side mounting. Center mounted valves are welded to the flange, side mounted valves are sealed to the side port of a double sided CF flange with an NPT fitting and allow in-line installation of the valve in your system.



Features:

- Valve type: 1/4 inch, bellows sealed
- Actuation: manual
- Temperature range:
CF flange mount: 60°C up to 315°C
ISO-QF flange mount: -20°C up to 150°C
- Helium leak rated less than 4×10^{-9} Std.cc/s

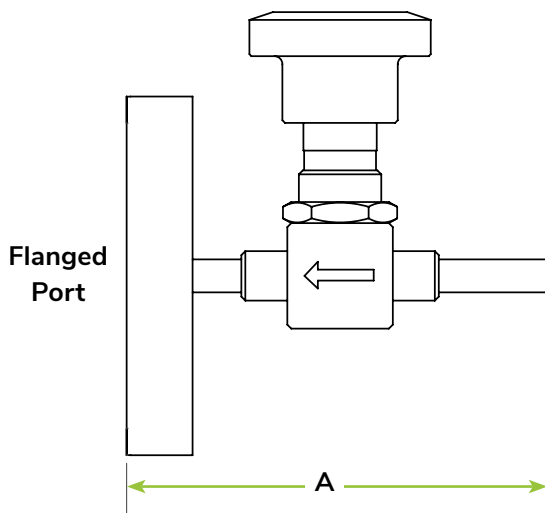
Product Notes:

- Vent or back fill your vacuum chamber

Options: call for price and availability

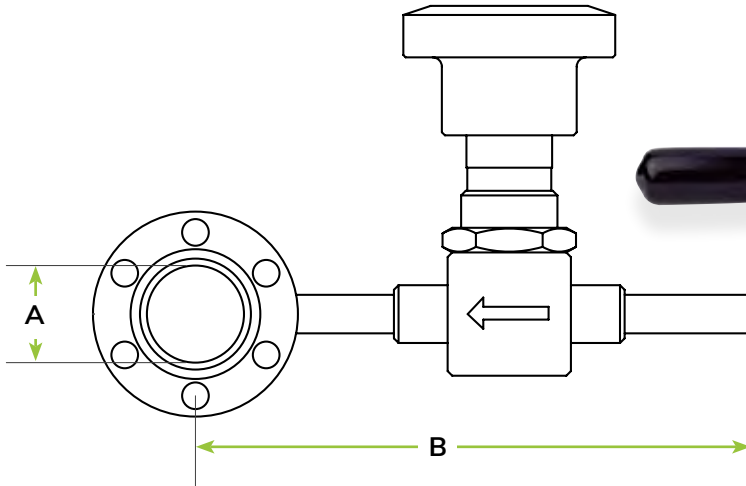
- Optional connections for valve port (VCR®, Swagelok®) standard is 1/4 inch tube end.
- Valves with side mounting to CF flanges can also be provided with a double port CF flange for the addition of a vacuum gauge.

Up-to-Air Valve with CF Flange Port Center Mount



PART #	REFERENCE ID	FLANGED PORT	A (in)	DESCRIPTION	UNIT PRICE
9100105	CF133-025-UTAV-3.00	CF133	3.00	Up-to-Air Valve with a CF133 Flange port	\$255.00
9100106	CF275-025-UTAV-3.19	CF275	3.19	Up-to-Air Valve with a CF275 Flange port	\$265.00

Up-to-Air Valve with Double-Sided CF Flange Port - Side Mount

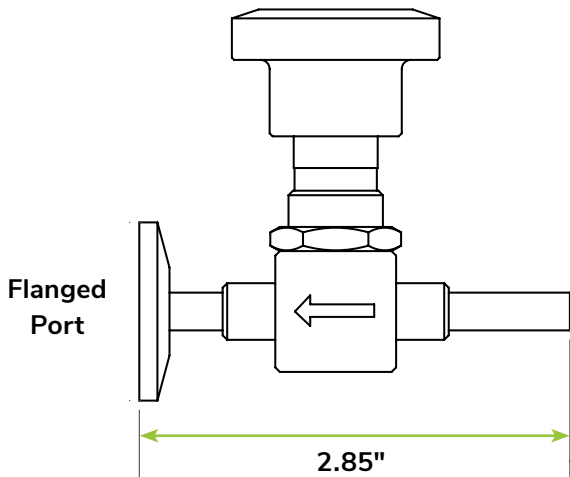


4

Up-to-Air Valves

PART #	REFERENCE ID	FLANGED PORT	A (in)	B (in)	DESCRIPTION	UNIT PRICE
9100107	CF133XCF133-075-UTAV-3.60	CF133D	0.625	3.60	Up-to-Air Valve with a CF133 Flange	\$265.00
9100108	CF275XCF275-150-UTAV-4.00	CF275D	1.50	4.00	Up-to-Air Valve with a CF275 Flange	\$275.00

Up-to-Air Valve with ISO-QF Flange Port Center Mount



PART #	REFERENCE ID	FLANGED PORT	DESCRIPTION	UNIT PRICE
9100101	QF16-025-UTAV-2.85	QF16	Up-to-Air Valve with a QF16 Flange port	\$255.00
9100102	QF25-025-UTAV-2.85	QF25	Up-to-Air Valve with a QF25 Flange port	\$255.00
9100103	QF40-025-UTAV-2.85	QF40	Up-to-Air Valve with a QF40 Flange port	\$260.00
9100104	QF50-025-UTAV-2.85	QF50	Up-to-Air Valve with a QF50 Flange port	\$265.00

RELIABLE UNDER ALL CONDITIONS.



Process stability requires reliable components - under all conditions. Don't compromise the reliability of your processes - benefit from the renowned performance of VAT vacuum valve solutions. Now available through **ANCORP**.



ANCORP is proud to announce that we are now an official distributor of a wide range of VAT vacuum valves. Order your next VAT valve from **ANCORP** today at sales@ancorp.com or call us at 1-800-352-6431 (1-800-FLANGE1)

Vacuum Valves



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VACUUM VALVES Introduction

Overview:

ANCORP offers three main types of vacuum shut-off valves for your application: Ball Valves, Poppet Valves and Gate Valves. Each type regulates gas flow through your system with simple open or close commands. These valves are designed to perform fully opened or closed. The standard design is not meant for flow control, but is a simple off/on control mechanism for your vacuum system.

BALL VALVES offer straight, unimpeded flow with minimal impact on system space needed to accommodate the valve body. Ball valves are durable valves that are less sensitive to particulate contamination than the other valve types and are especially useful in dirty vacuum applications.

The valve is opened and closed by turning the stem 90° back and forth. The hole in the ball provides unobstructed flow in the open position and the sealing seat for the ball wipes the ball clean as it is opened and closed providing a consistent seal.



POPPET VALVES are made of a body, actuator and internal poppet.

The actuator transports the poppet linearly. When the poppet is moved toward the top of the valve, the internal body cavity is open to the system and flow is unimpeded. Once the actuator moves the poppet to the bottom of the valve, an elastomer sealing ring is compressed onto a sealing surface on the lower body of the valve. This creates a vacuum

tight seal and stops flow. Poppet valves are available in two body styles: 90° Angle and In-Line.

GATE VALVES provide straight through, unimpeded flow with the smallest valve body profile. Gate valves are ideal for space-constrained applications that require maximum conductance. A central carriage or gate is raised and lowered by the actuator within the body. In the open position, the gate retracts completely from the tube aperture allowing unrestricted flow. In the closed position, an elastomer sealing ring is compressed against a sealing surface on the inside of one of the body ports.



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INDUSTRY LEADING HIGH VACUUM BALL VALVES

5

ANCORP Ball Valves



BALL VALVE CONFIGURATOR

To configure an **ANCORP REFERENCE ID** for a basic high vacuum ball valve, use Steps 1 - 4. To add available options, use Steps 5 - 9.

BASIC

OPTIONS

1	2	3	4	5	6	7	8	9	10	11
BODY SERIES	VALVE MATERIAL	FLANGE TUBE SIZE	FLANGE TYPE	ACTUATOR TYPE	POSITION INDICATOR	ACTUATOR CONFIG.	HEATER READY	SOLENOID	LOCKING KIT	OVERALL LENGTH
D	4	150	- QF40 -	XX	- XXXX -	XX	- X	- XXX	- XX	- XXX

EXAMPLE 1:

B4075-QF16

is a "B" series manual ball valve with a 0.57" ball port, "4" stainless steel, 0.75" flange tube size and "QF16" Quick Flange port terminations.



EXAMPLE 2:

F4200-QF50-AA

is an "F" series ball valve with a 1.87" ball port, stainless steel, 2.0" Flange tube size, "QF50" port terminations, with an "AA" air-to-air actuator.



BALL VALVE CONFIGURATOR

1 Body Series

Choose from one of our 7 Body styles. Call for more options.

BODY SERIES	BALL PORT SIZE	FLANGE TYPE OPTIONS
B	0.57"	QF16, QF25, TE, SE
C	0.81"	QF25, QF40, TE, SE
D	1.25"	QF40, TE, SE
E	1.50"	QF50, TE, SE
F	1.87"	QF50, LF63
HC	2.375, 2.875, 3.875"	LF63, LF80, LF100
TL	1.375"	QF40, QF50

2 Valve Material

Unlike cast or forged ball valves, **ANCORP** ball valves are machined from solid corrosive resistant 316L stainless steel bar. Our experience has shown that for vacuum applications, cast and forged ball valves are subject to voids, microscopic leak paths, porosity and inclusions in the material. This leads to virtual leaks, outgassing, permeation and longer pump down times.

CODE	MATERIAL
4	316L Stainless Steel

3 Flange Tube Size

The Flange Tube Size is dependent on the Body Series selected in Step 1 and the Flange Type selected in Step 4.

CODE	TUBE SIZE	BODY SERIES
050	0.5"	B
075	0.75"	B
100	1.0"	B, C
150	1.5"	C, D, TL
200	2.0"	E, F, TL
250	2.5"	HC
300	3.0"	HC
400	4.0"	HC

4 Flange Type

The available port terminations are dependent on the Body Series selected in Step 1. The chart above shows a current list of our standard configurations; however, other configurations are available upon request (i.e. ASA/ANSI, ConFlat®, etc).

PORT TERMINATION	FLANGE TYPE	BODY SERIES
QF16	ISO-Quick Flange	B
QF25	ISO-Quick Flange	B, C
QF40	ISO-Quick Flange	C, D, TL
QF50	ISO-Quick Flange	E, F, TL
LF63	ISO-Large Flange	F, HC
LF80	ISO-Large Flange	HC
LF100	ISO-Large Flange	HC
TE	Tube Ends	B - E
SE	Pipe Thread	B - E

5 Actuator Type

Any valve can be configured with a pneumatic actuator. Air-to-spring or air-to-air are both available and have a temperature range of 20°C to 150°C (-4°F to 302°F).

CODE	ACTUATOR TYPE
(Blank)	Manual
AS	Air-to-Spring
AA	Air-to-Air

NOTE: Only for actuated valves.

6 Position Indicator

If you chose an actuator in Step 5, you may want to add a position indicator. A position indicator has a visual indicator on the top as well as two mechanical or proximity switches for electrical output. Switches can be wired to provide signals when the valve is opened, closed or both. Other wiring options available.

CODE	POSITION INDICATOR
(Blank)	Not Present
PI04	Present

NOTE: Only for actuated valves and manual TL.

7 Actuator Configuration

If you chose an air-to-spring actuator in Step 5, it can be configured spring to close (Normally Closed) or spring to open (Normally Opened). Normally closed is the standard fail safe configuration.

CODE	CONFIGURATION
(Blank)	Normally Closed
NO	Normally Open

NOTE: Only for spring return actuated valves.

8 Heater Ready

The **ANCORP** ball valve can be assembled to allow space for a heater jacket. This space is referred to as a standoff. The standard standoff is 3/8" (038); however, the valve can be assembled with other sized standoffs to accommodate other sized heaters. Custom standoffs are represented with an "H" then three digits (XXX). For example, a 3/4" (0.75") standoff is represented as 075.

TL Series ball valves have a standard 3/4" and 5/8" standoffs respectively for manual and pneumatic valves. HC brackets allow for 1/2" minimum clearance for all sizes.

CODE	STANDOFF
(Blank)	No Standoffs
H	3/8" Standoffs
HXXX	Custom Standoff (XXX = X.xx")

NOTE: Only for C, D, E, & F valves.

9 Solenoid

If an actuator is chosen in Step 5, it can be configured with a solenoid from this list.

CODE	SOLENOID TYPE
(Blank)	No Solenoid
S3A	3-Way 120 VAC (AS)
S3C	3-Way 24 VDC (AS)
S4A	4-Way 120 VAC (AA)
S4C	4-Way 24 VDC (AA)

NOTE: Only for actuated valves.

11 Overall Length

All **ANCORP** ball valves have a standard overall length (OAL) from flange to flange which is represented as Dimension A. The ball valve can be manufactured with a custom OAL. If a custom length is preferred, use three digits to represent the OAL in inches. For example, an OAL of 4.56 inch would be represented as "456".

CODE	LENGTH
(Blank)	Standard
XXX	Custom Length

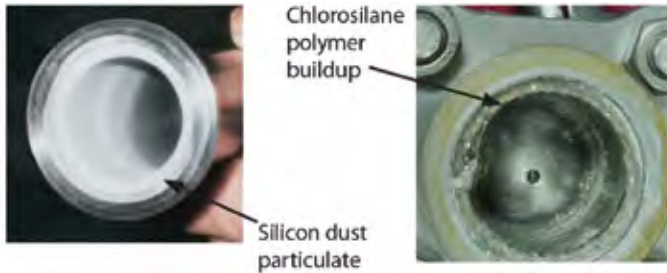
NOTE: Some custom lengths may not be available due to certain size and cost constraints, check with a technical sales representative before ordering a custom length.

10 Locking Kit

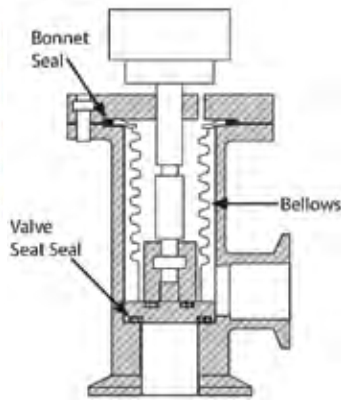
CODE	LOCKING KIT
(Blank)	No Locking Kit
LK	Locking Kit Installed

NOTE: Only for C, D, E, & F manual valves. The TL series has lock kits for manual and pneumatic. HC manual valves feature a standard locking handle.

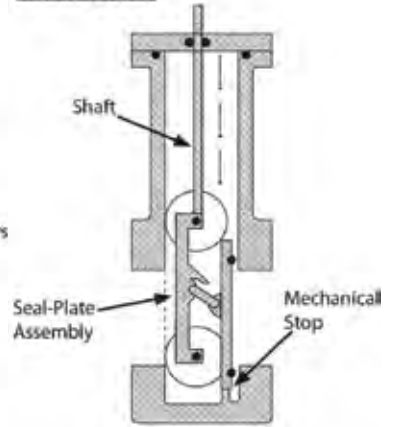
2-Way Ball Valves Introduction



Poppet Valve



Gate Valve



PROCESS CHALLENGES

Byproduct buildup is one of the major challenges of many coating operations in which metals, plastics or glass are deposited in vapor form inside and around chambers, valves and other vacuum components. The buildup of these particles greatly reduces efficiency of the application process leading to eventual system failure.

Conductance Limiters such as: Chlorosilane polymers, Siloxane polymers and Silicon dust contribute to byproduct buildup.

The Solution to Byproduct Buildup:

Foreline/Exhaust temperatures range from 80° C to > 250° C.

High Throughput: Process uptime critical to reduce cost.

INSTALL CHALLENGES

Poppet Valve

- Byproducts can etch/crack bellows
- Sealing surface can accumulate byproduct

Gate Valve

- Numerous surfaces for byproduct to collect
- Sealing surface can accumulate byproduct
- Complicated internals

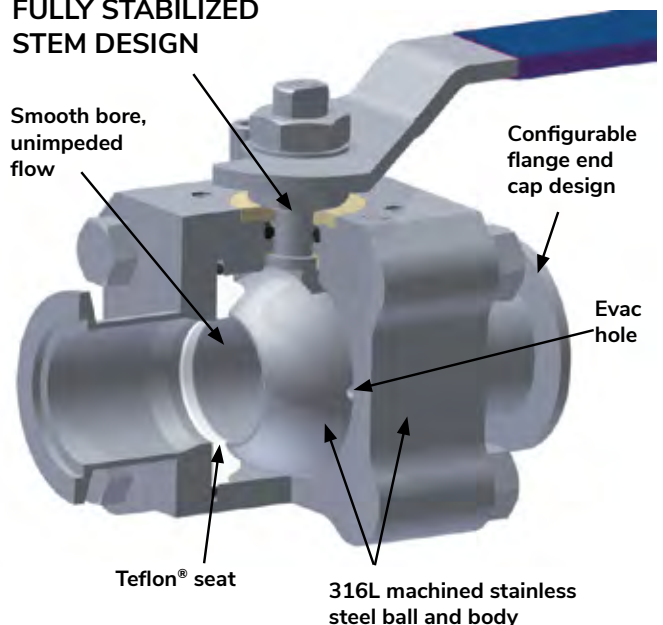
2-Way Ball Valves Introduction

ANCORP's Engineered Solution for Process Challenges: Extended Life (XL) Ball Valves

When leading OEM's came to **ANCORP** looking for a more durable valve for today's harsh coating processes, our engineers went to work testing new stem designs - the Extended Life (XL) Stem Design was born. This new patented design extends the stem seal life by 10X, has fewer wetted components, and a fully stabilized stem along with all the other features of **ANCORP** ball valves.

In short, the XL ball valve reduces valve maintenance, reduces tool downtime, and increases throughput. It's one of the main reasons **ANCORP** remains the leading innovator in high vacuum ball valves.

ANCORP'S PATENTED FULLY STABILIZED STEM DESIGN



2-Way Ball Valve Specifications



5

2-Way Ball Valves

Features:

General:

- Straight-through, unimpeded flow
- Higher conductance than a comparable poppet valve
- Poppetless design has less wetted surface
- 1/4 turn, quick actuation
- "Self-cleaning" action prevents deposition buildup
- Valves can be easily serviced with ANCORP's standard maintenance kits

Additional Options:

Call for price and availability

- Configurable to meet system requirements
 - Port terminations
 - Overall length
 - Heater ready
 - Fail-safe position
- Other o-ring materials and lubricants available

Specifications:

Vacuum and Temperature Ratings:

- Vacuum rated to 1×10^{-8} Torr
- Helium leak rated less than 1×10^{-9} std. cc/s
- Standard fluoroelastomer seal (i.e. Viton®): -26°C to 205°C (-15°F to 400°F)
- Sizes: 3/4" up to 4"

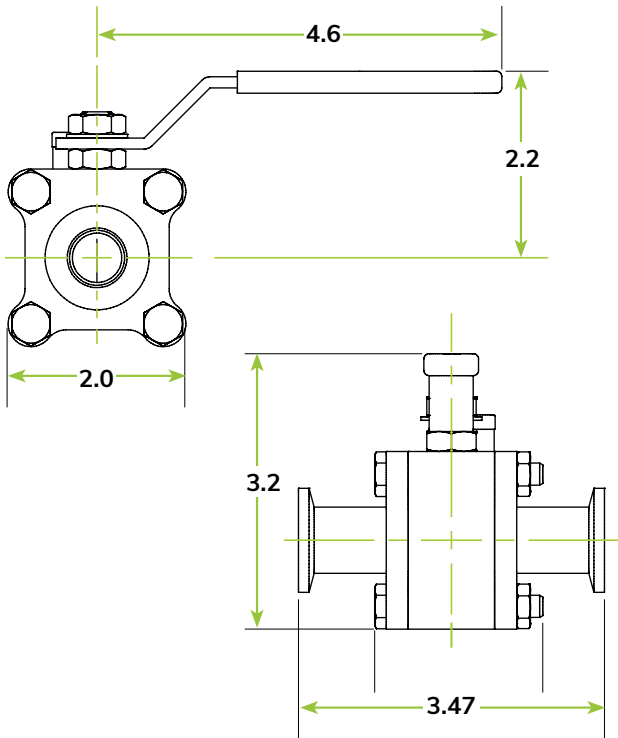
Materials:

- Valve body, ball, stem, and end caps: machined from solid 316L stainless steel
- Standard o-ring material: fluoroelastomer (i.e. Viton®)
- Bearings: PEEK
- Seats: PTFE Teflon®
- Lubricant: Dow Corning® High Vacuum Grease

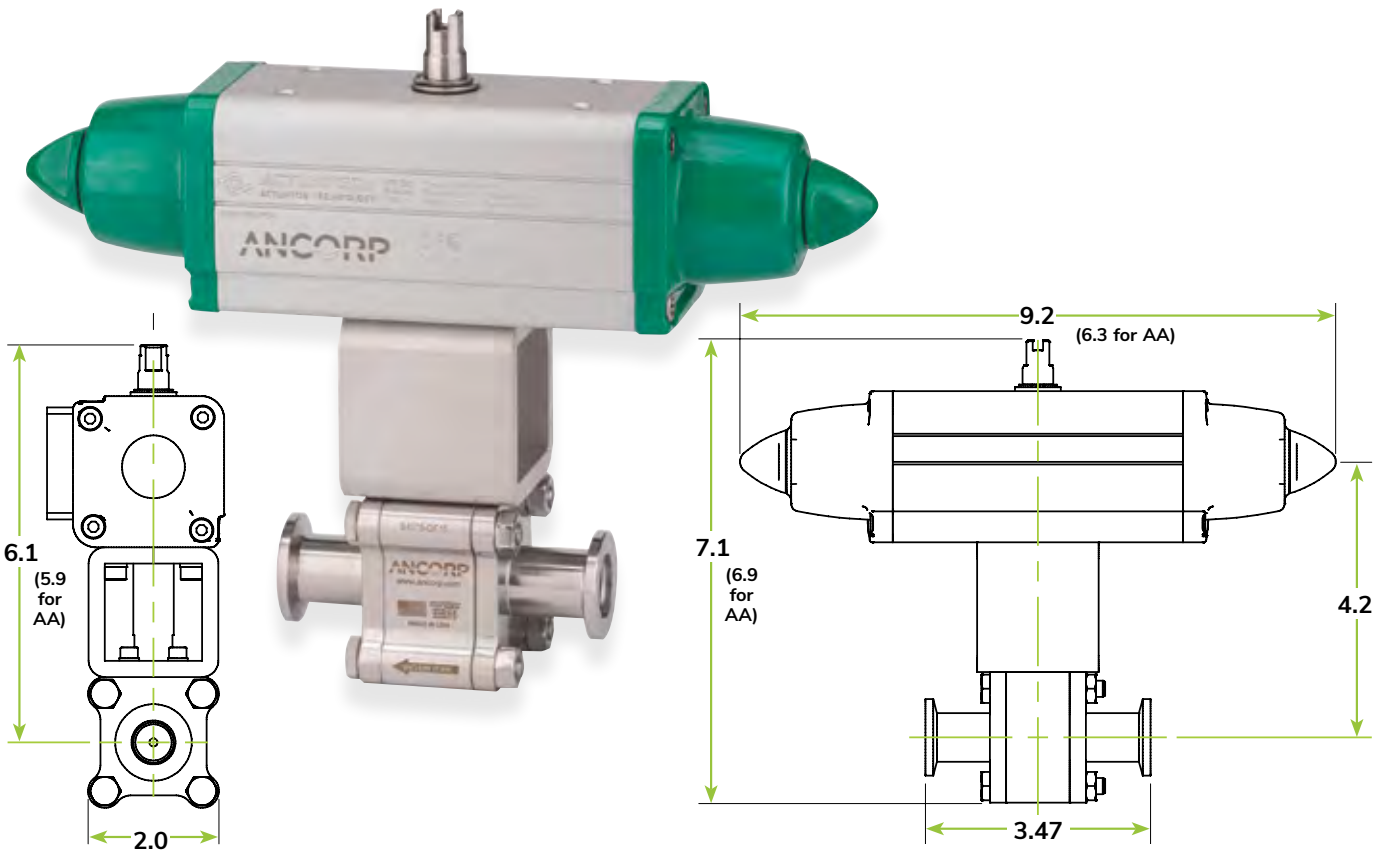
Pneumatic:

- Actuator operating pressure: 80 - 120 psig
- Actuator temperature range:
 - Moist air: 0°C to 150°C (32°F to 302°F)
 - Dry air: -20°C to 150°C (-4°F to 302°F)
- Both Air-to-Open, Spring-to-Close (AS) single acting actuators and Air-to-Open, Air-to-Close (AA) double acting actuators are available
- "Fail-safe open" or "fail-safe closed" configuration available for ball valves with AS actuators
- 1/8 NPT air line hook-up
- Visual and mechanical position indicators available
- Solenoids available for 120VAC, 240VAC or 24VDC versions

3/4" B-Series Ball Valves - Manual



3/4" B-Series Ball Valves - Pneumatic



5 3/4" B-Series 2-Way Ball Valves

3/4" B-Series Ball Valves - Manual

PART #	REFERENCE ID	END CAP TYPE	BALL SIZE	END CAP TUBE SIZE	COND.(L/s)	UNIT PRICE
3000028	B4075-QF16	QF16	0.56	.75" O.D.	5	\$275.00

3/4" B-Series Ball Valves - Pneumatic

PART #	REFERENCE ID	END CAP TYPE	BALL SIZE	END CAP TUBE SIZE	COND.(L/s)	UNIT PRICE
3009120	B4075-QF16-AS	QF16	0.56	.75" O.D.	5	\$1,000.00
3008120	B4075-QF16-AA	QF16	0.56	.75" O.D.	5	\$720.00

Maintenance Kit for B-Series Ball Valves

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
3010068	B-RK-S	B Series Maintenance Kit	\$85.00

Kit Contains:

(1) stem o-ring, (2) body o-rings, (2) Teflon® seats, (1) Teflon® spacer, (1) PEEK stem bearing, (1) nylon lock nut
 Maintenance Instructions are available for download at: <https://ancorp.com/manuals-technical-data-sheets/>

Lock Kit for B-Series Ball Valves

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
3023003	B-LK	Lock Kit for B-Series Manual Ball Valve	\$75.00

Solenoids

REFERENCE ID	DESCRIPTION	UNIT PRICE
-S3A	3-way 120VAC (AS) Air-to-Spring Solenoid	\$110.00
-S3C	3-way 24VDC (AS) Air-to-Spring Solenoid	\$110.00
-S4A	4-way 120VAC (AA) Air-to-Air Solenoid	\$110.00
-S4C	4-way 24VDC (AA) Air-to-Air Solenoid	\$110.00



Position Indicator

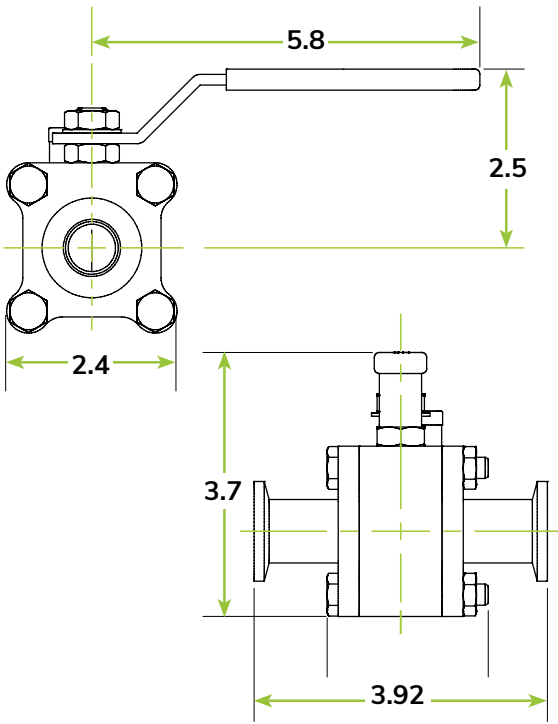
PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
3122065	SB-PI-04	Standard Switchbox - 2-switch mechanical w/4 bare wires	\$110.00

Other wiring options available upon request.

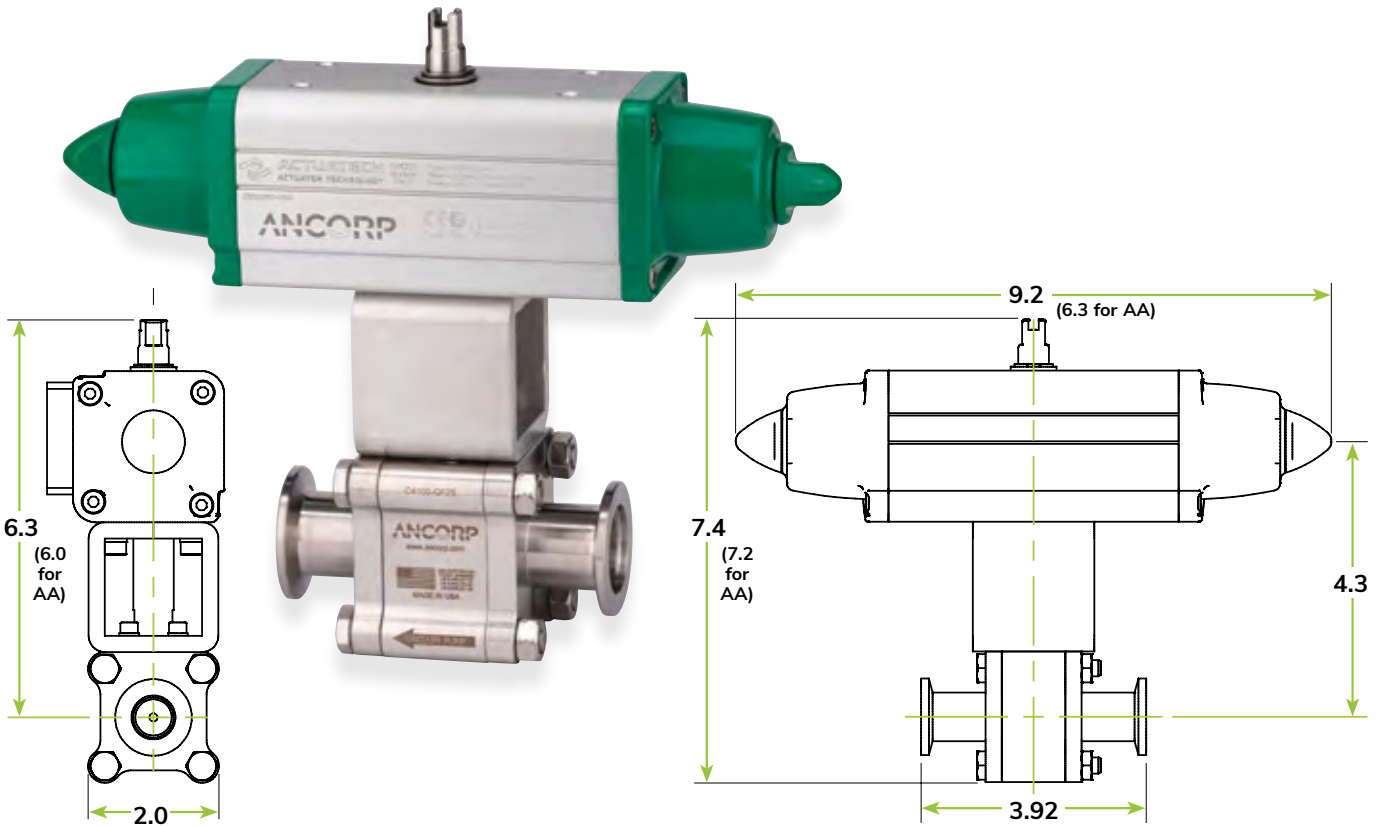


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3/4" B-Series 2-Way Ball Valves

1" C-Series 2-Way Ball Valves - Manual



1" C-Series 2-Way Ball Valves - Pneumatic



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1" C-Series 2-Way Ball Valves

1" C-Series 2-Way Ball Valves - Manual

PART #	REFERENCE ID	END CAP TYPE	BALL SIZE	END CAP TUBE SIZE	COND.(L/s)	UNIT PRICE
3000030	C4100-QF25	QF25	0.81	1" O.D.	13	\$395.00

1" C-Series 2-Way Ball Valves - Pneumatic

PART #	REFERENCE ID	END CAP TYPE	BALL SIZE	END CAP TUBE SIZE	COND.(L/s)	UNIT PRICE
3009128	C4100-QF25-AS	QF25	0.81	1" O.D.	13	\$1,120.00
3008128	C4100-QF25-AA	QF25	0.81	1" O.D.	13	\$835.00

Maintenance Kit for C-Series Ball Valves

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
3010109	C-RK-S	C Series Maintenance Kit	\$105.00

Kit Contains:

(1) stem o-ring, (2) body o-rings, (2) Teflon® seats, (1) Teflon® spacer, (1) PEEK stem bearing, (1) nylon lock nut
 Maintenance Instructions are available for download at: <https://ancorp.com/manuals-technical-data-sheets/>

Lock Kit for C-Series Ball Valves

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
3023004	C-LK	Lock Kit for C-Series Manual Ball Valve	\$85.00

Solenoids

REFERENCE ID	DESCRIPTION	UNIT PRICE
-S3A	3-way 120VAC (AS) Air-to-Spring Solenoid	\$110.00
-S3C	3-way 24VDC (AS) Air-to-Spring Solenoid	\$110.00
-S4A	4-way 120VAC (AA) Air-to-Air Solenoid	\$110.00
-S4C	4-way 24VDC (AA) Air-to-Air Solenoid	\$110.00



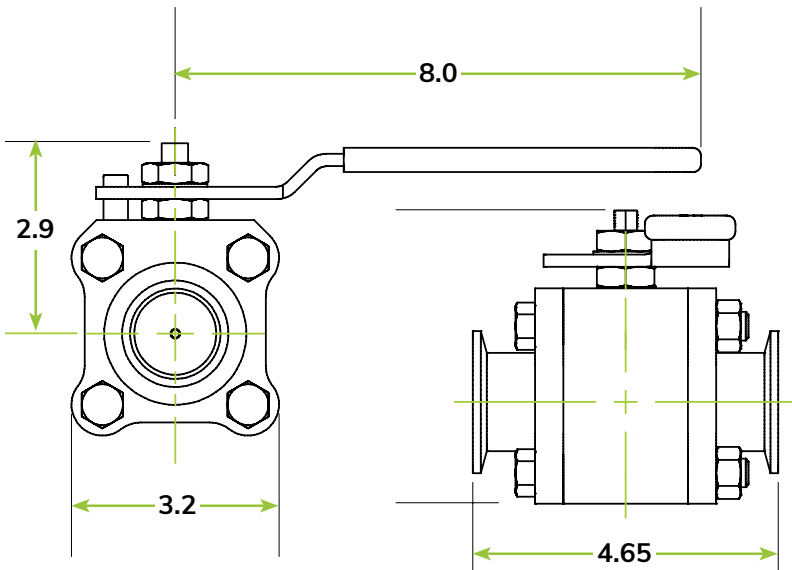
Position Indicator

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
3122065	SB-PI-04	Standard Switchbox - 2-switch mechanical w/4 bare wires	\$110.00

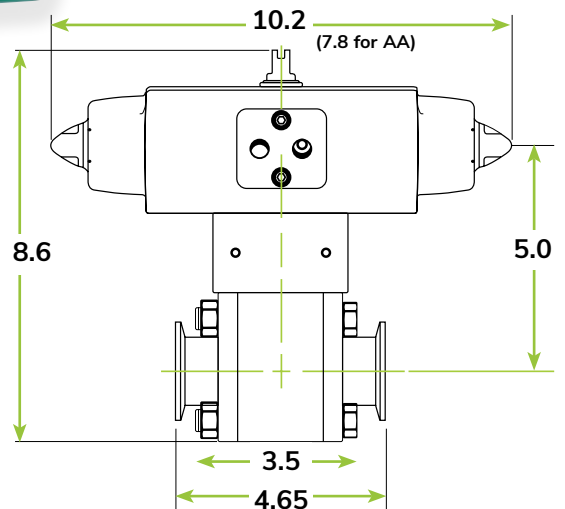
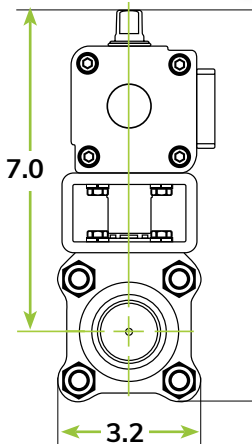
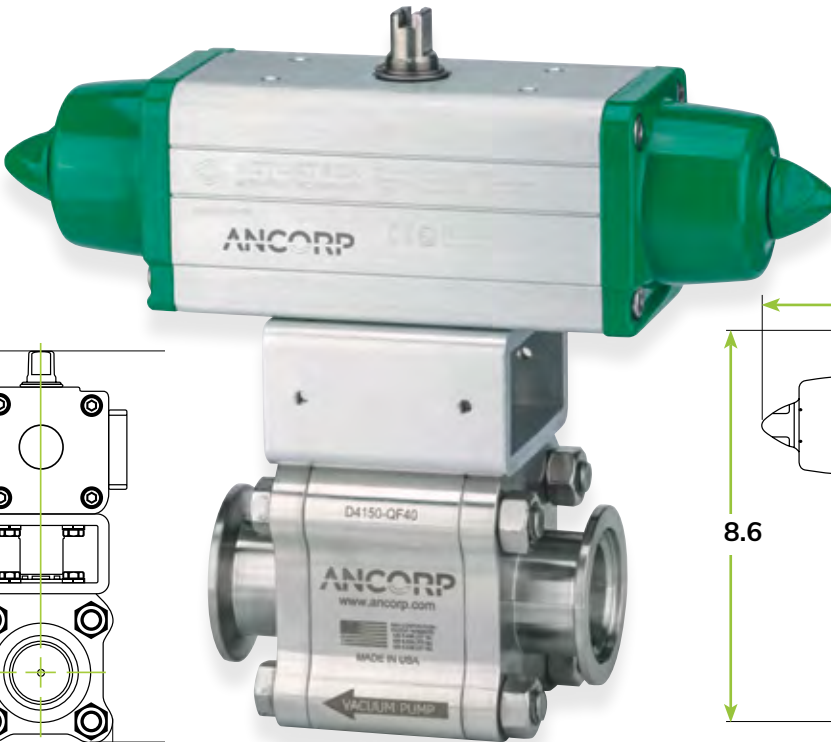
Other wiring options available upon request.



1 1/2" D-Series 2-Way Ball Valves - Manual



1 1/2" D-Series 2-Way Ball Valves - Pneumatic



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1 1/2" D-Series 2-Way Ball Valves

1 1/2" D-Series 2-Way Ball Valves - Manual

PART #	REFERENCE ID	END CAP TYPE	BALL SIZE	END CAP TUBE SIZE	COND.(L/s)	UNIT PRICE
3000032	D4150-QF40	QF40	1.25	1.5" O.D.	35	\$685.00

1 1/2" D-Series 2-Way Ball Valves - Pneumatic

PART #	REFERENCE ID	END CAP TYPE	BALL SIZE	END CAP TUBE SIZE	COND.(L/s)	A (in)	UNIT PRICE
3009135	D4150-QF40-AS	QF40	1.25	1.5" O.D.	35	10.2	\$1,450.00
3008135	D4150-QF40-AA	QF40	1.25	1.5" O.D.	35	7.8	\$1,225.00

Maintenance Kits for D-Series Ball Valves

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
3010141	D-RK-S	D Series Maintenance Kit	\$155.00

Kit Contains:

(1) stem o-ring, (2) body o-rings, (2) Teflon® seats, (1) Teflon® spacer, (1) PEEK stem bearing, (1) nylon lock nut
 Maintenance Instructions are available for download at: <https://ancorp.com/manuals-technical-data-sheets/>

Lock Kit for D-Series Ball Valves

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
3023005	D/E/F-LK	Lock Kit for D, E, or F-Series Manual Ball Valve	\$60.00

Solenoids

REFERENCE ID	DESCRIPTION	UNIT PRICE
-S3A	3-way 120VAC (AS) Air-to-Spring Solenoid	\$110.00
-S3C	3-way 24VDC (AS) Air-to-Spring Solenoid	\$110.00
-S4A	4-way 120VAC (AA) Air-to-Air Solenoid	\$110.00
-S4C	4-way 24VDC (AA) Air-to-Air Solenoid	\$110.00



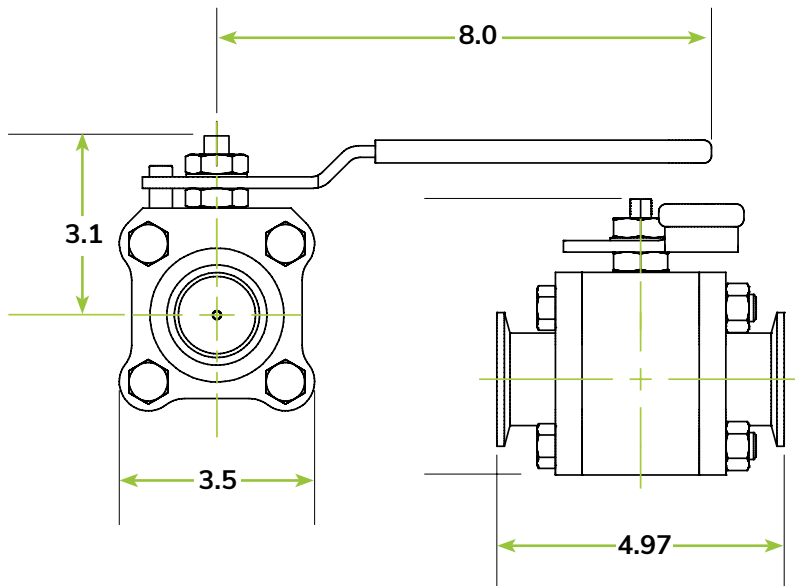
Position Indicator

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
3122065	SB-PI-04	Standard Switchbox - 2-switch mechanical w/4 bare wires	\$110.00

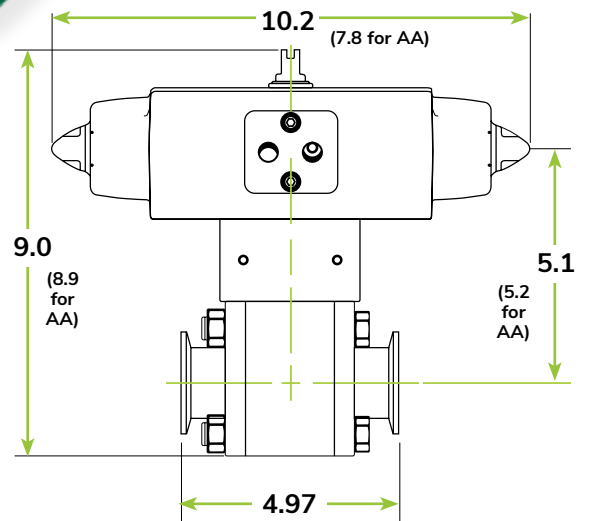
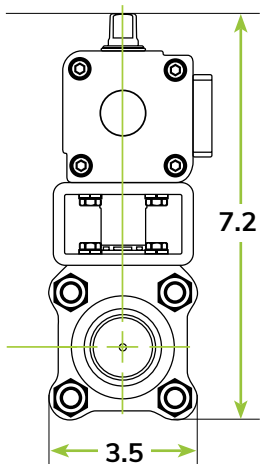
Other wiring options available upon request.



2" E-Series 2-Way Ball Valves - Manual



2" E-Series 2-Way Ball Valves - Pneumatic



2" E-Series 2-Way Ball Valves

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2" E-Series 2-Way Ball Valves - Manual

PART #	REFERENCE ID	END CAP TYPE	BALL SIZE	END CAP TUBE SIZE	COND.(L/s)	UNIT PRICE
3000035	E4200-QF50	QF50	1.5	2" O.D.	57	\$800.00

2" E-Series 2-Way Ball Valves - Pneumatic

PART #	REFERENCE ID	END CAP TYPE	BALL SIZE	END CAP TUBE SIZE	COND.(L/s)	UNIT PRICE
3009150	E4200-QF50-AS	QF50	1.5	2" O.D.	57	\$1,680.00
3008150	E4200-QF50-AA	QF50	1.5	2" O.D.	57	\$1,345.00

Maintenance Kits for E-Series Ball Valves

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
3010181	E-RK-S	E Series Maintenance Kit	\$180.00

Kit Contains:

(1) stem o-ring, (2) body o-rings, (2) Teflon® seats, (1) Teflon® spacer, (1) PEEK stem bearing, (1) nylon lock nut, (2) stem bushings

Maintenance Instructions are available for download at: <https://ancorp.com/manuals-technical-data-sheets/>

Lock Kit for E-Series Ball Valves

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
3023005	D/E/F-LK	Lock Kit for D, E, or F-Series Manual Ball Valve	\$60.00

Solenoids

REFERENCE ID	DESCRIPTION	UNIT PRICE
-S3A	3-way 120VAC (AS) Air-to-Spring Solenoid	\$110.00
-S3C	3-way 24VDC (AS) Air-to-Spring Solenoid	\$110.00
-S4A	4-way 120VAC (AA) Air-to-Air Solenoid	\$110.00
-S4C	4-way 24VDC (AA) Air-to-Air Solenoid	\$110.00



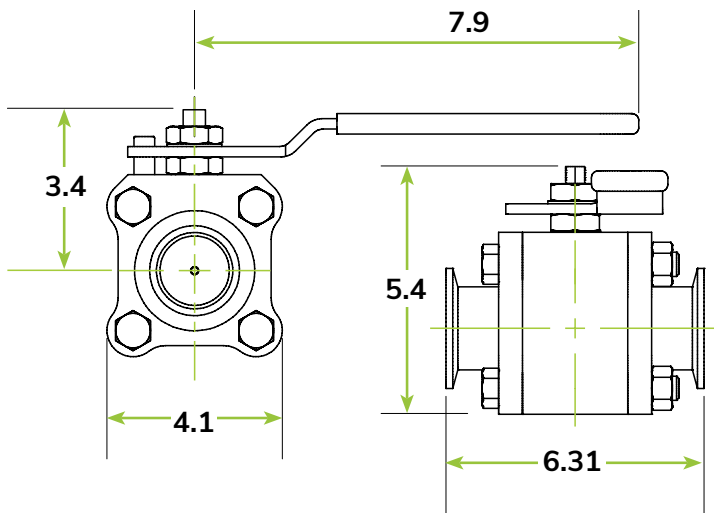
Position Indicator

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
3122065	SB-PI-04	Standard Switchbox - 2-switch mechanical w/4 bare wires	\$110.00

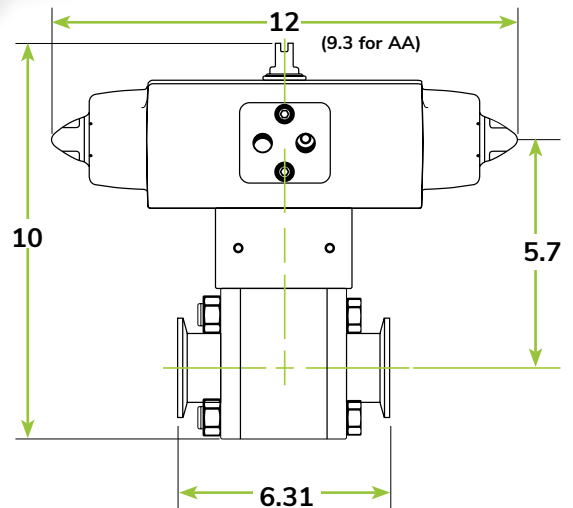
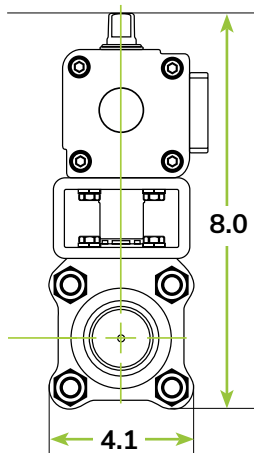
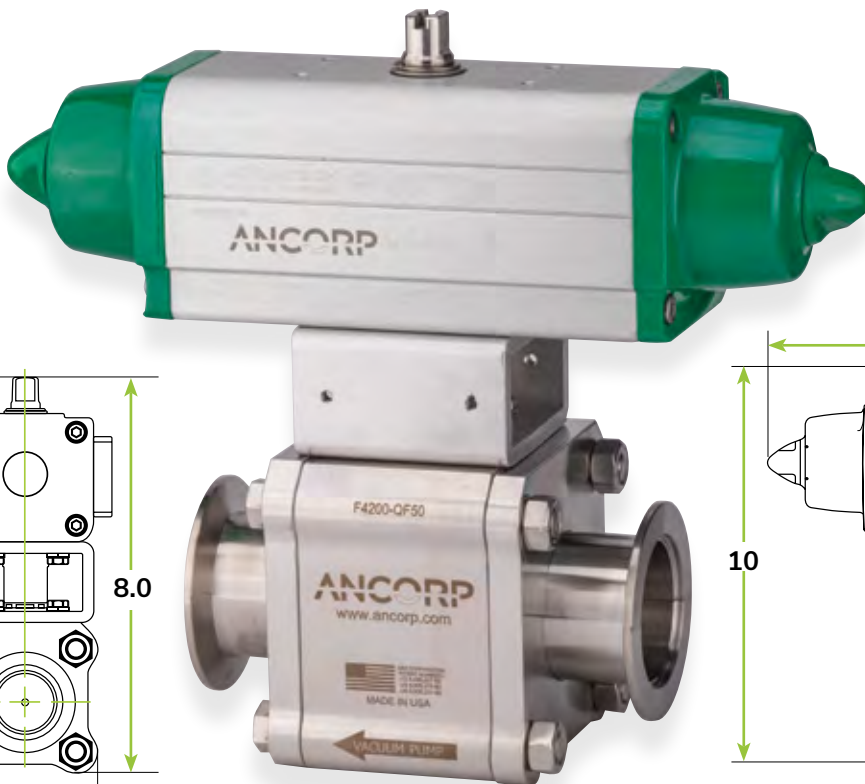
Other wiring options available upon request.



2" F-Series 2-Way Ball Valves - Manual



2" F-Series 2-Way Ball Valves - Pneumatic



2" F-Series 2-Way Ball Valves

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2" F-Series 2-Way Ball Valves - Manual

PART #	REFERENCE ID	END CAP TYPE	BALL SIZE	END CAP TUBE SIZE	COND.(L/s)	UNIT PRICE
3002035	F4200-QF50	QF50	1.87	2" O.D.	87	\$1,195.00

2" F-Series 2-Way Ball Valves - Pneumatic

PART #	REFERENCE ID	END CAP TYPE	BALL SIZE	END CAP TUBE SIZE	COND.(L/s)	UNIT PRICE
3009160	F4200-QF50-AS	QF50	1.87	2" O.D.	87	\$2,075.00
3008160	F4200-QF50-AA	QF50	1.87	2" O.D.	87	\$1,740.00

Maintenance Kits for F-Series Ball Valves

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
3010084	F-RK-S	F Series Maintenance Kit	\$205.00

Kit Contains: (1) stem o-ring, (2) body o-rings, (2) Teflon® seats, (1) Teflon® spacer, (1) PEEK stem bearing, (1) nylon lock nut, (2) stem bushings

Maintenance Instructions are available for download at: <https://ancorp.com/manuals-technical-data-sheets/>

Lock Kit for F-Series Ball Valves

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
3023005	D/E/F-LK	Lock Kit for D, E, or F-Series Manual Ball Valve	\$60.00

Solenoids

REFERENCE ID	DESCRIPTION	UNIT PRICE
-S3A	3-way 120VAC (AS) Air-to-Spring Solenoid	\$110.00
-S3C	3-way 24VDC (AS) Air-to-Spring Solenoid	\$110.00
-S4A	4-way 120VAC (AA) Air-to-Air Solenoid	\$110.00
-S4C	4-way 24VDC (AA) Air-to-Air Solenoid	\$110.00



Position Indicator

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
3122065	SB-PI-04	Standard Switchbox - 2-switch mechanical w/4 bare wires	\$110.00

Other wiring options available upon request.



HC Series Ball Valves Introduction

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HC Series 2-Way Ball Valves



Description

ANCORP's High Conductance (HC) Vacuum Ball Valve is the latest and largest addition to the patented Extended Life ball valve series. The HC provides maximum conductance with its fully ported ball and reduced overall length, two-piece 316L stainless steel body.

Its improved smooth contour maximizes heat transfer between the valve and heating components. The valve is opened or closed manually or pneumatically by 1/4 turn, quick actuation.

Applications

The HC Ball Valve is manufactured from corrosive resistant materials to perform impressively in aggressive processes and on exhaust lines. This valve can be

configured to be heated and insulated for temperature stability inside the valve. Body and stem seals can be changed to meet customer specific processes as required.

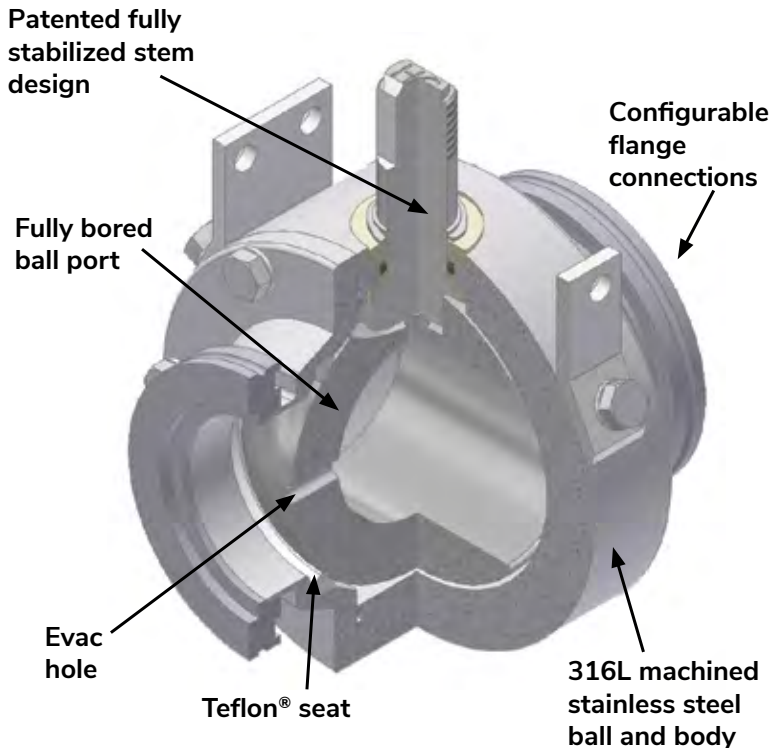
This valve also works exceptionally well in systems that create deposition within the vacuum lines. The Teflon® sealing surface is protected from direct deposition, maintaining a clean dynamic seal to prevent failure due to contamination. The HC Ball Valve is an extremely robust high vacuum valve designed to perform in the most challenging of environments.

PATENTED FULLY STABILIZED STEM DESIGN

XL Stem Design minimizes wetted components

A&N CORPORATION US PATENTS:
US 8,496,227 B2, US 8,905,375 B2, US 8,936,231 B2

HC Series Ball Valves Specifications



Features:

- **Fully Bored Ball Port:** Maximizes conductance with straight-through, unimpeded flow
- **Minimized Overall Length and Slimmer Profile:** Increases conductance and reduces weight and footprint.
- **Two-Piece Body:** One less body o-ring seal means one less potential leak path and huge maintenance cost reductions when using perfluoroelastomers.
- **Smooth Contour:** Maximizes heat transfer from heating components.
- **Extra Space Between Body & Handle Brackets:** Minimum of 5/8" clearance allows more room for heating components
- **Adjustable Stroke Pneumatic Actuator:** Adjusts to +/-5° to ensure proper open/close over life of the valve.
- **Integrated Handle Lock:** Prevents accidental opening/closing. Lock out-tag out ready.

Specifications:

Vacuum and Temperature Ratings:

- Vacuum rated to 1×10^{-8} Torr
- Helium leak rated less than 1×10^{-9} std. cc/s
- Standard fluoroelastomer seal: -26°C to 150°C (-15°F to 302°F)

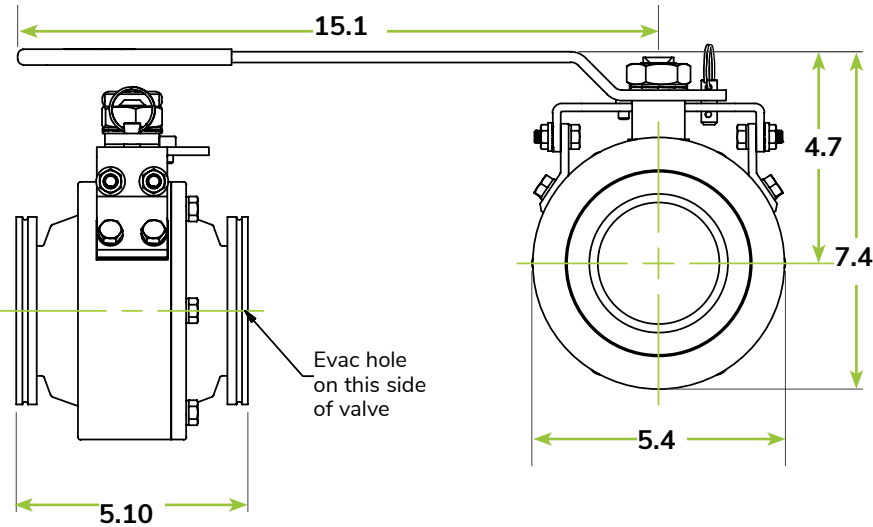
Materials:

- Valve body, ball, stem, and end cap body: machined from solid 316L stainless steel
- Standard seal: fluoroelastomer (other options available)
- Seats: PTFE
- Lubricant: Dow Corning® High Vacuum Grease (other options available)

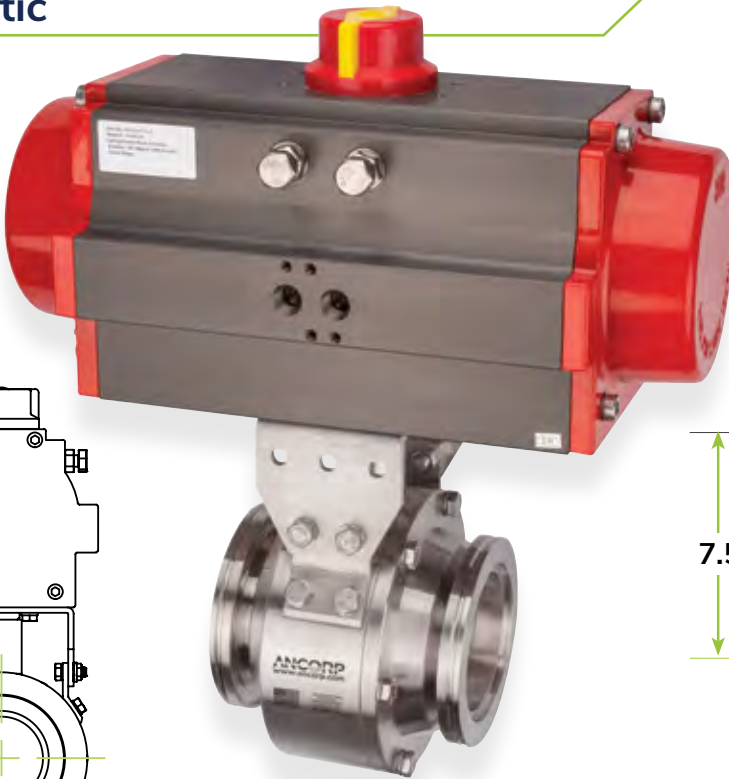
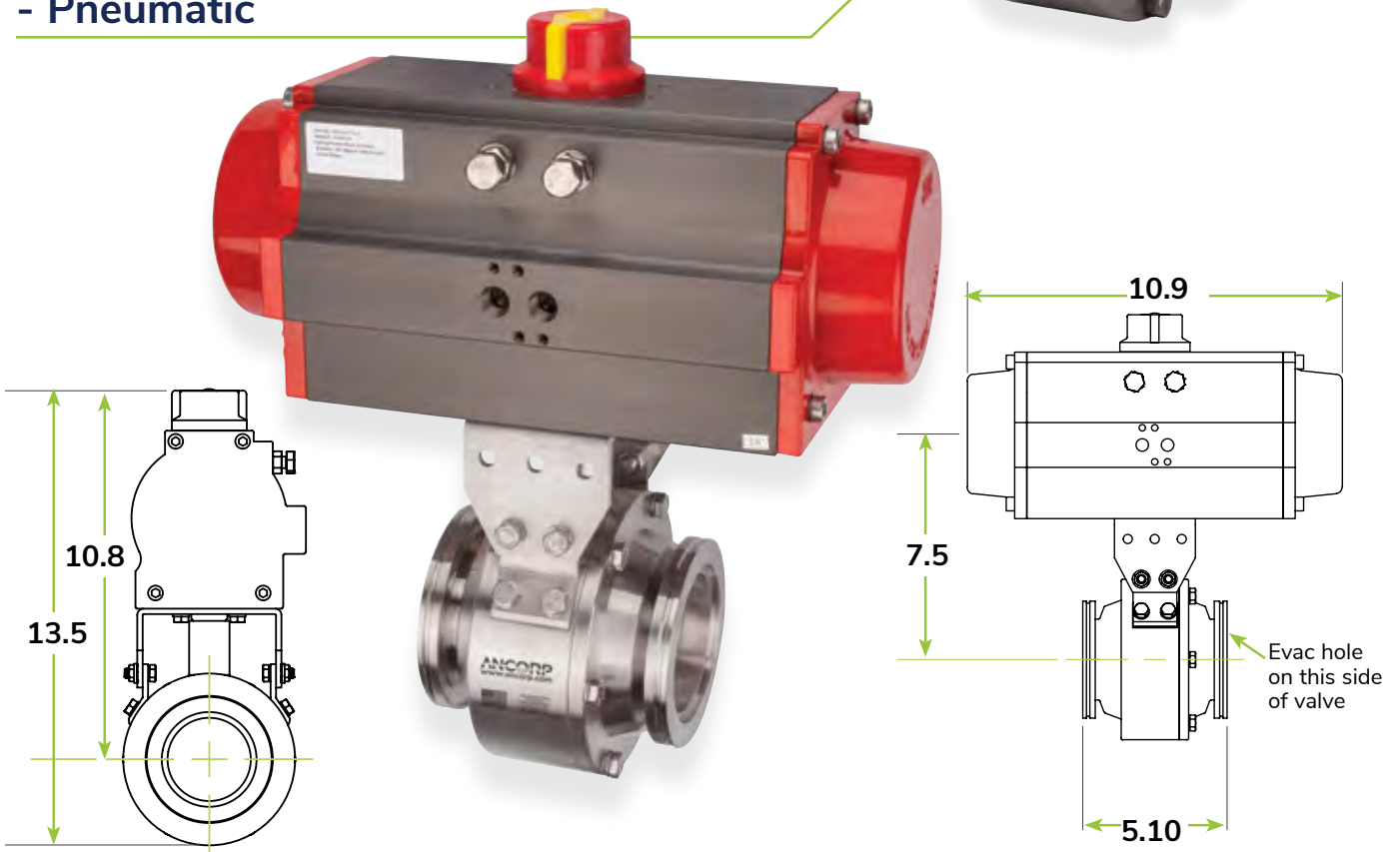
Pneumatic:

- Actuator operating pressure: 80 psig
- Actuator temperature range: - Dry air: -18°C to 149°C (0°F to 300°F)
- Both Air-to-Open, Spring-to-Close (AS) single acting actuators and Air-to-Open, Air-to-Close (AA) double acting actuators are available
- "Fail-safe open" or "fail-safe closed" configuration available for ball valves with AS actuators
- 1/4 NPT air line hook-up
- The actuators used with HC valves have visual position indication as standard, and electrical position indicators are available
- Solenoids available for 120VAC or 24VDC versions

2 1/2" HC Series 2-Way Ball Valves - Manual



2 1/2" HC Series 2-Way Ball Valves - Pneumatic



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2 1/2" HC Series 2-Way Ball Valves

2 1/2" HC Series 2-Way Ball Valves - Manual

PART #	REFERENCE ID	END CAP TYPE	BALL SIZE	END CAP TUBE SIZE	COND.(L/s)	UNIT PRICE
3007210	HC4250-LF63	LF63	2.375	2.5	205	\$3,000.00

2 1/2" HC Series 2-Way Ball Valves - Pneumatic

PART #	REFERENCE ID	END CAP TYPE	BALL SIZE	END CAP TUBE SIZE	COND.(L/s)	UNIT PRICE
3007220	HC4250-LF63-AS	LF63	2.375	2.5	205	\$3,450.00
3007230	HC4250-LF63-AA	LF63	2.375	2.5	205	\$3,450.00

2 1/2" HC Series 2-Way Ball Valve Maintenance Kit

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
3010799	HC250-RK-S	HC Series 2 1/2" Ball Valve Maintenance Kit	CALL

Kit Contains:

(1) stem o-ring, (1) body o-ring, (2) Teflon® seats, (1) bottom stem bearing, (1) top stem bearing, (1) wave spring washer, (1) spiral retaining ring.

Maintenance Instructions are available for download at: <https://ancorp.com/manuals-technical-data-sheets/>

Solenoids

REFERENCE ID	DESCRIPTION	UNIT PRICE
-S3A	3-way 120VAC (AS) Air-to-Spring Solenoid	\$110.00
-S3C	3-way 24VDC (AS) Air-to-Spring Solenoid	\$110.00
-S4A	4-way 120VAC (AA) Air-to-Air Solenoid	\$110.00
-S4C	4-way 24VDC (AA) Air-to-Air Solenoid	\$110.00



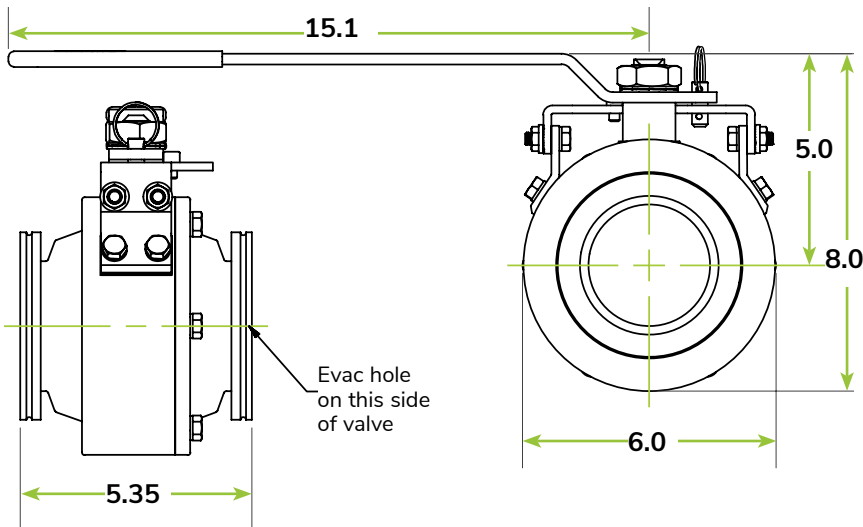
Position Indicator

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
3122065	SB-PI-04	Standard Switchbox - 2-switch mechanical w/4 bare wires	\$110.00

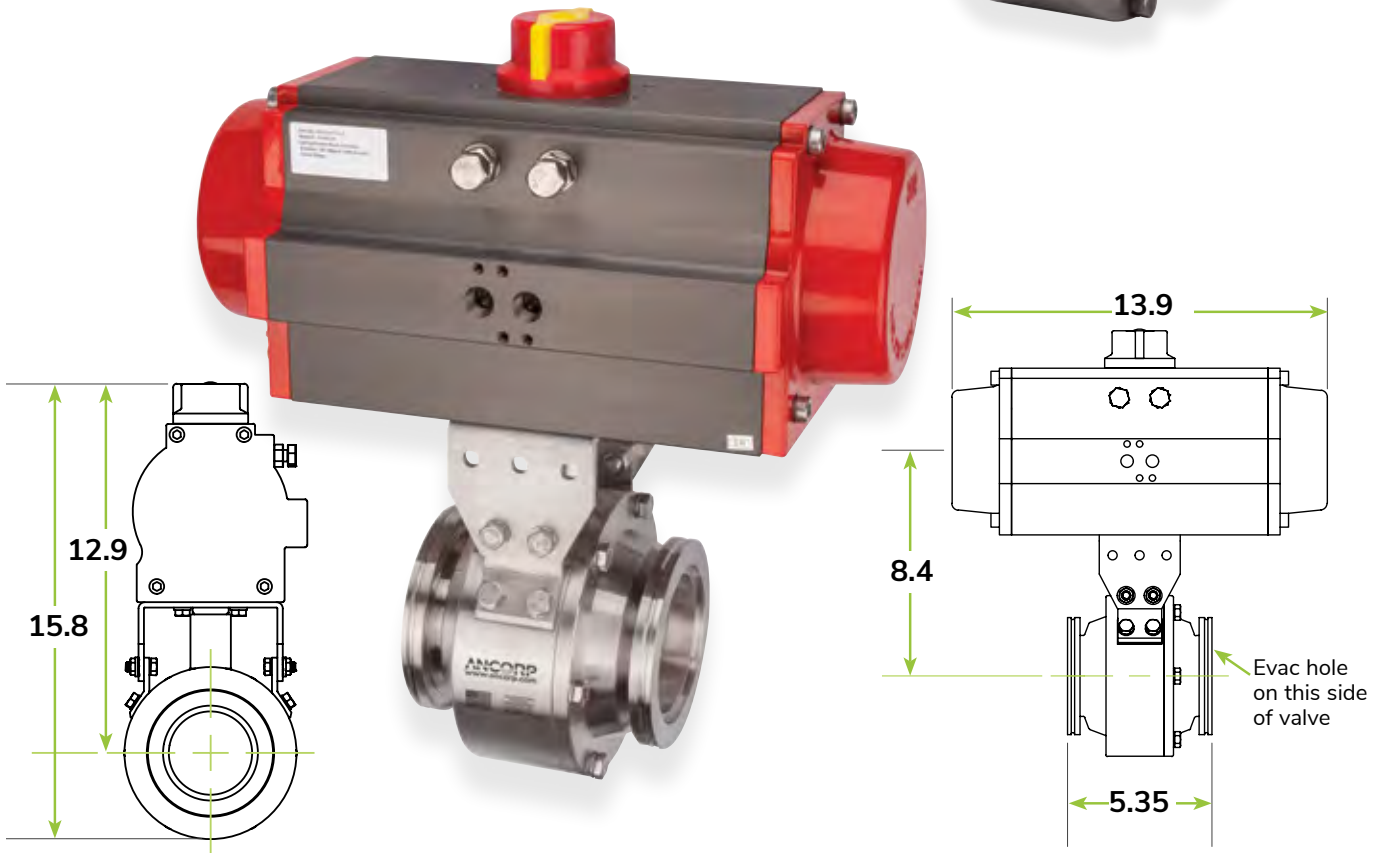
Other wiring options available upon request.



3" HC Series 2-Way Ball Valves - Manual



3" HC Series 2-Way Ball Valves - Pneumatic



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3" HC Series 2-Way Ball Valves

3" HC Series 2-Way Ball Valves - Manual

PART #	REFERENCE ID	END CAP TYPE	BALL SIZE	END CAP TUBE SIZE	COND.(L/s)	UNIT PRICE
3007310	HC4300-LF80	LF80	2.875	3.0	347	\$3,500.00

3" HC Series 2-Way Ball Valves - Pneumatic

PART #	REFERENCE ID	END CAP TYPE	BALL SIZE	END CAP TUBE SIZE	COND.(L/s)	UNIT PRICE
3007320	HC4300-LF80-AS	LF80	2.875	3.0	347	\$4,160.00
3007330	HC4300-LF80-AA	LF80	2.875	3.0	347	\$4,160.00

3" HC Series 2-Way Ball Valve Maintenance Kit

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
3010849	HC300-RK-S	HC Series 3" Ball Valve Maintenance Kit	CALL

Kit Contains:

(1) stem o-ring, (1) body o-ring, (2) Teflon® seats, (1) bottom stem bearing, (1) top stem bearing, (1) wave spring washer, (1) spiral retaining ring.

Maintenance Instructions are available for download at: <https://ancorp.com/manuals-technical-data-sheets/>

Solenoids

REFERENCE ID	DESCRIPTION	UNIT PRICE
-S3A	3-way 120VAC (AS) Air-to-Spring Solenoid	\$110.00
-S3C	3-way 24VDC (AS) Air-to-Spring Solenoid	\$110.00
-S4A	4-way 120VAC (AA) Air-to-Air Solenoid	\$110.00
-S4C	4-way 24VDC (AA) Air-to-Air Solenoid	\$110.00



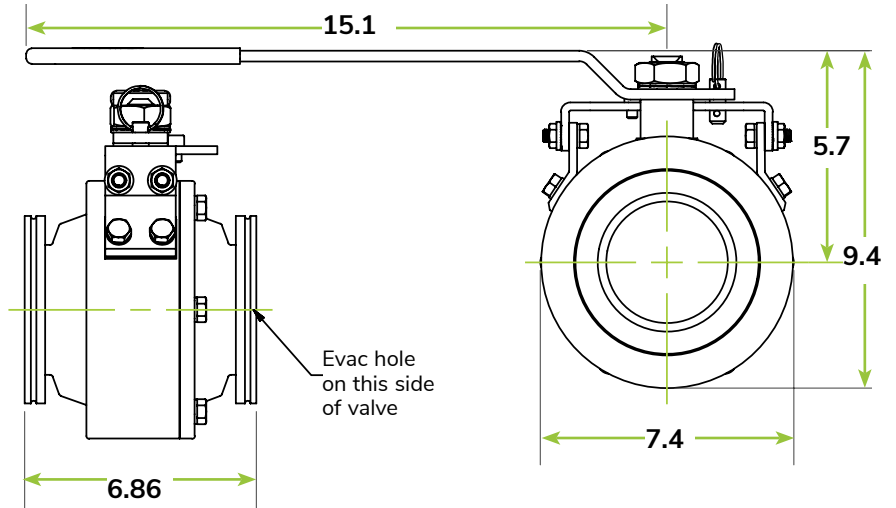
Position Indicator

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
3122065	SB-PI-04	Standard Switchbox - 2-switch mechanical w/4 bare wires	\$110.00

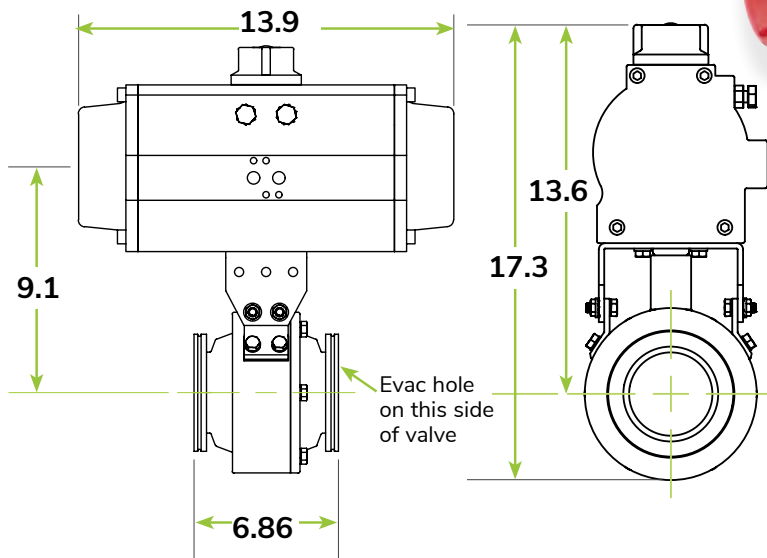
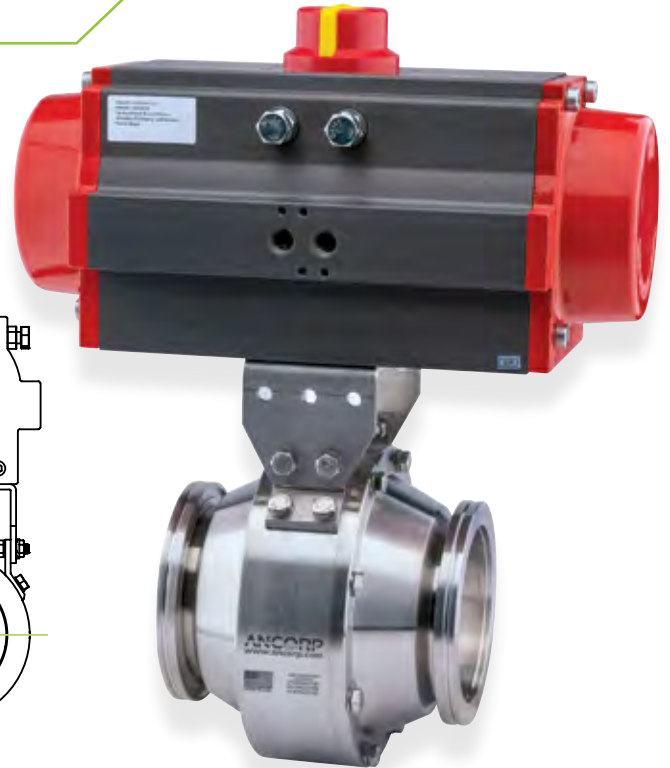
Other wiring options available upon request.



4" HC Series 2-Way Ball Valves - Manual



4" HC Series 2-Way Ball Valves - Pneumatic



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4" HC Series 2-Way Ball Valves

4" HC Series 2-Way Ball Valves - Manual

PART #	REFERENCE ID	END CAP TYPE	BALL SIZE	END CAP TUBE SIZE	COND.(L/s)	UNIT PRICE
3007410	HC4400-LF100	LF100	3.875	4.0	657	\$ 4,500.00

4" HC Series 2-Way Ball Valves - Pneumatic

PART #	REFERENCE ID	END CAP TYPE	BALL SIZE	END CAP TUBE SIZE	COND.(L/s)	UNIT PRICE
3007420	HC4400-LF100-AS	LF100	3.875	4.0	657	\$5,160.00
3007430	HC4400-LF100-AA	LF100	3.875	4.0	657	\$5,160.00

4" HC Series 2-Way Ball Valve Maintenance Kit

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
3010899	HC400-RK-S	HC Series 4" Ball Valve Maintenance Kit	CALL

Kit Contains:

(1) stem o-ring, (1) body o-ring, (2) Teflon® seats, (1) bottom stem bearing, (1) top stem bearing, (1) wave spring washer, (1) spiral retaining ring.

Maintenance Instructions are available for download at: <https://ancorp.com/manuals-technical-data-sheets/>

Solenoids

REFERENCE ID	DESCRIPTION	UNIT PRICE
-S3A	3-way 120VAC (AS) Air-to-Spring Solenoid	\$110.00
-S3C	3-way 24VDC (AS) Air-to-Spring Solenoid	\$110.00
-S4A	4-way 120VAC (AA) Air-to-Air Solenoid	\$110.00
-S4C	4-way 24VDC (AA) Air-to-Air Solenoid	\$110.00



Position Indicator

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
3122065	SB-PI-04	Standard Switchbox - 2-switch mechanical w/4 bare wires	\$110.00

Other wiring options available upon request.

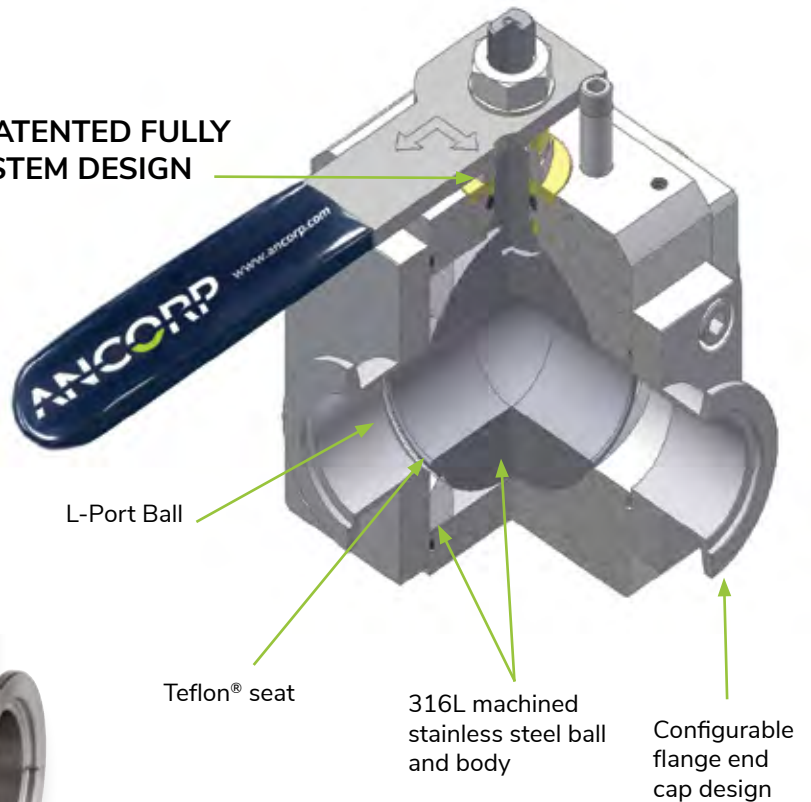


TL Series 3-Way Ball Valves Introduction

5 TL Series 3-Way Ball Valves



ANCORP'S PATENTED FULLY STABILIZED STEM DESIGN



Description

ANCORP's 3-way ball valve is designed to divert flow between a common port and either of two side ports. The 3-way ball valve consists of a body, stem, L-port ball, and three end caps. Components are machined from corrosive resistant 316L stainless steel. Fluoroelastomers are used to seal the stem and end caps from atmosphere while Teflon® seats cold flow around the ball to isolate one port while diverting flow through the other. Flow through the valve is diverted manually or pneumatically by 1/4 turn, quick actuation.

Applications

The corrosion resistant design of ANCORP's 3-way vacuum ball valves makes them ideal for diverting flow or isolating pumping lines, reactors, traps, and scrubbers on vacuum process tools.

PATENTED FULLY STABILIZED STEM DESIGN

XL Stem Design minimizes wetted components

A&N CORPORATION US PATENTS:

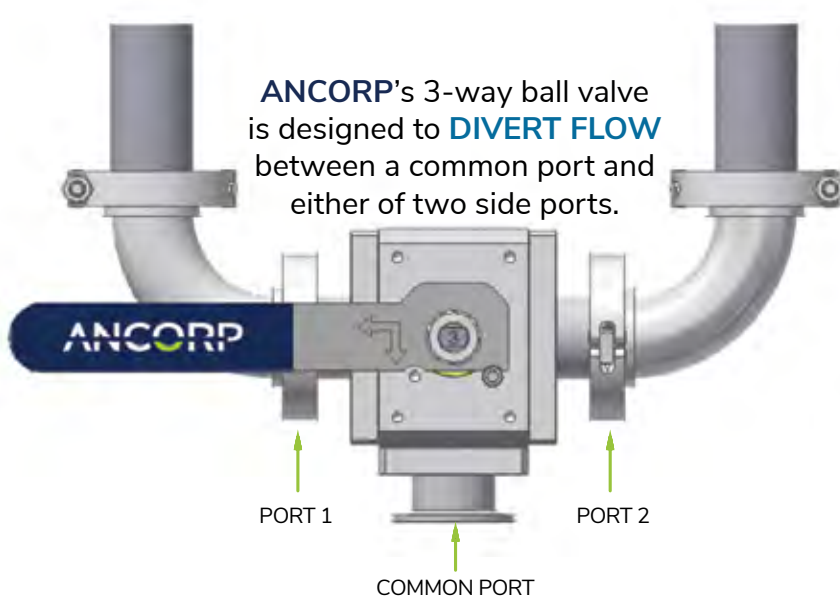
US 8,496,227 B2, US 8,905,375 B2, US 8,936,231 B2

Features:

ANCORP's 3-way ball valve maximizes design efficiencies in high vacuum systems when compared to multi-valve systems with equivalent functionality:

- Reduced bill of materials
- Reduced footprint
- Reduced overall weight
- Reduced design complexity
- Fewer actuated components
- Fewer leak paths
- Less total area to heat
- Reduced maintenance costs from MRO parts

TL Series 3-Way Ball Valves Specifications



ANCORP's ball valves are routinely configured with non-standard seals and greases to meet system requirements for high temperature or highly corrosive applications. To have an ANCORP ball valve configured for your system, contact one of our Application Engineers at 800-352-6431.

5

TL Series 3-Way Ball Valves



Specifications:

Vacuum and Temperature Ratings:

- Vacuum rated to 1×10^{-8} Torr
- Standard fluoroelastomer seal: -26°C to 150°C (-15°F to 302°F)

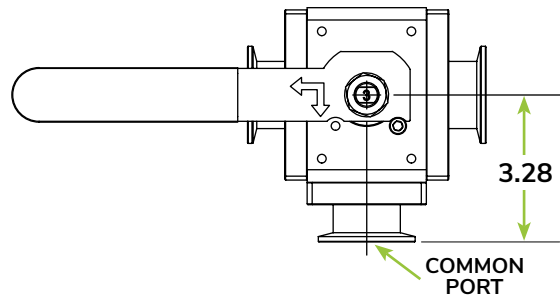
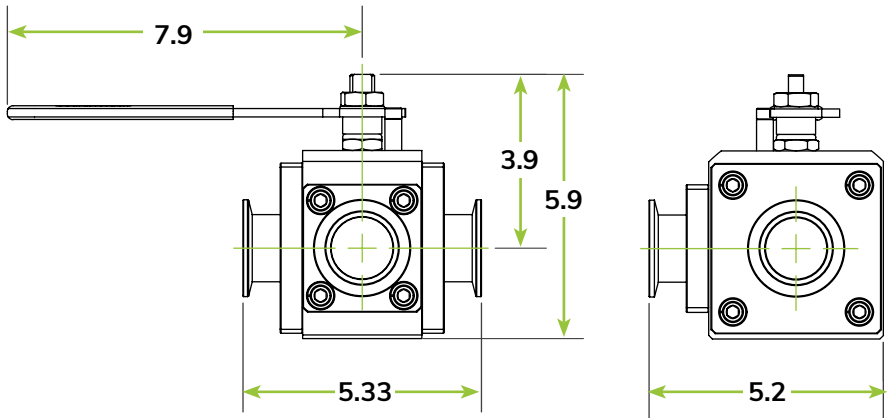
Materials:

- Valve body, ball, stem, and end caps: machined from solid 316L stainless steel
- Standard seal: fluoroelastomer
- Seats: Teflon® PTFE
- Lubricant: Dow Corning® High Vacuum Grease

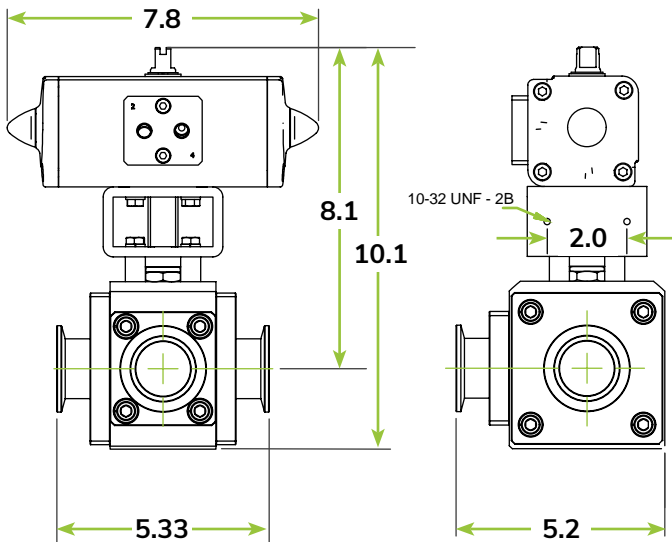
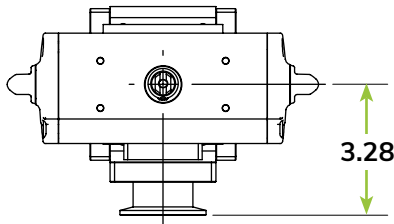
Pneumatic:

- Actuator operating pressure: 80 - 120 psig
- Actuator temperature range:
 - Moist air: 0°C to 150°C (32°F to 302°F)
 - Dry air: -20°C to 150°C (-4°F to 302°F)
- 1/8 NPT air line hook-up
- Visual and electromechanical position indicators available
- Solenoids available for 120VAC, or 24VDC versions

1 1/2" TL Series 3-Way Ball Valves - Manual



1 1/2" TL Series 3-Way Ball Valves - Pneumatic



5 1 1/2" TL Series 3-Way Ball Valves

1 1/2" TL Series 3-Way Ball Valves - Manual

PART #	REFERENCE ID	END CAP TYPE	BALL SIZE	END CAP TUBE SIZE	COND.(L/s)	UNIT PRICE
3008305	TL4150-QF40-H075	QF40	1.375	1.5" O.D.	29	\$1,850.00

1 1/2" TL Series 3-Way Ball Valves - Pneumatic

PART #	REFERENCE ID	END CAP TYPE	BALL SIZE	END CAP TUBE SIZE	COND.(L/s)	UNIT PRICE
3008325	TL4150-QF40-AA-H062	QF40	1.375	1.5" O.D.	29	\$2,395.00

1 1/2" TL Series 3-Way Ball Valves Maintenance Kit

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
3010930	TL-RK-S	3-Way Series Ball Valve Maintenance Kit	\$205.00

Kit Contains:

(1) stem o-ring, (3) body o-rings, (2) Teflon® seats, (1) PEEK stem bearing, (1) nylon lock nut
 Maintenance Instructions are available for download at: <https://ancorp.com/manuals-technical-data-sheets/>

Lock Kit for TL Series 3-Way Ball Valves

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
3023006	TL-LK-P	Lock Kit for 3-Way TL-Series Pneumatic Ball Valve	\$170.00
3023007	TL-LK-M	Lock Kit for 3-Way TL-Series Manual Ball Valve	\$170.00

Solenoids

REFERENCE ID	DESCRIPTION	UNIT PRICE
-S3A	3-way 120VAC (AS) Air-to-Spring Solenoid	\$110.00
-S3C	3-way 24VDC (AS) Air-to-Spring Solenoid	\$110.00
-S4A	4-way 120VAC (AA) Air-to-Air Solenoid	\$110.00
-S4C	4-way 24VDC (AA) Air-to-Air Solenoid	\$110.00



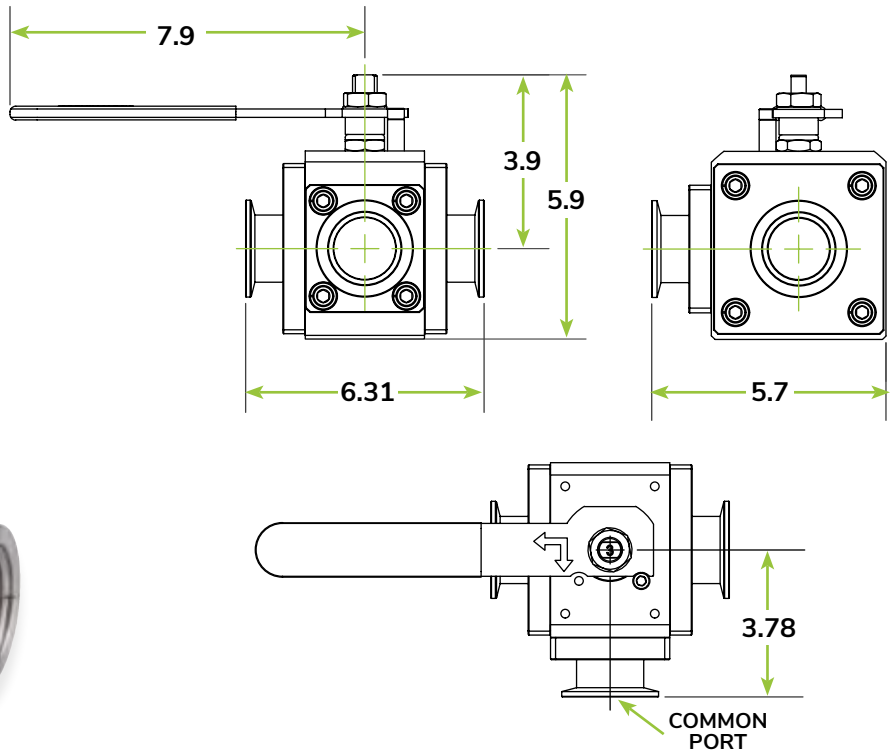
Position Indicator

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
3122165	TL-SB-PI-04	Standard Switchbox - 2-switch mechanical w/4 bare wires	\$110.00

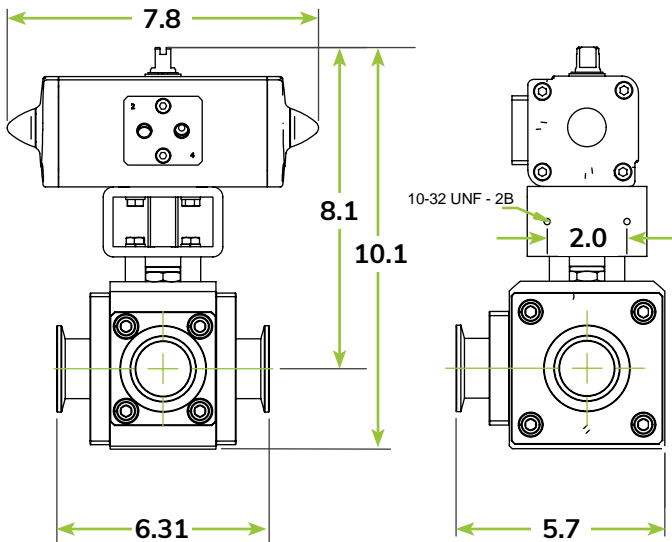
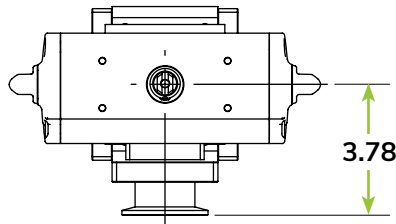
Other wiring options available upon request.



2" TL Series 3-Way Ball Valves - Manual



2" TL Series 3-Way Ball Valves - Pneumatic



5
2" TL Series 3-Way Ball Valves

2" TL Series 3-Way Ball Valves - Manual

PART #	REFERENCE ID	END CAP TYPE	BALL SIZE	END CAP TUBE SIZE	COND.(L/s)	UNIT PRICE
3008306	TL4200-QF50-H075	QF50	1.375	2" O.D.	34	\$1,950.00

2" TL Series 3-Way Valves - Pneumatic

PART #	REFERENCE ID	END CAP TYPE	BALL SIZE	END CAP TUBE SIZE	COND.(L/s)	UNIT PRICE
3008326	TL4200-QF50-AA-H062	QF50	1.375	2" O.D.	34	\$2,495.00

2" TL Series 3-Way Ball Valves Maintenance Kit

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
3010930	TL-RK-S	3-Way Series Ball Valve Maintenance Kit	\$205.00

Kit Contains:

(1) stem o-ring, (3) body o-rings, (2) Teflon® seats, (1) PEEK stem bearing, (1) nylon lock nut
 Maintenance Instructions are available for download at: <https://ancorp.com/manuals-technical-data-sheets/>

Lock Kit for TL Series 3-Way Ball Valves

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
3023006	TL-LK-P	Lock Kit for 3-Way TL-Series Pneumatic Ball Valve	\$170.00
3023007	TL-LK-M	Lock Kit for 3-Way TL-Series Manual Ball Valve	\$170.00

Solenoids

REFERENCE ID	DESCRIPTION	UNIT PRICE
-S3A	3-way 120VAC (AS) Air-to-Spring Solenoid	\$110.00
-S3C	3-way 24VDC (AS) Air-to-Spring Solenoid	\$110.00
-S4A	4-way 120VAC (AA) Air-to-Air Solenoid	\$110.00
-S4C	4-way 24VDC (AA) Air-to-Air Solenoid	\$110.00



Position Indicator

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
3122165	TL-SB-PI-04	Standard Switchbox - 2-switch mechanical w/4 bare wires	\$110.00

Other wiring options available upon request.





VAT



WORLD MARKET LEADER IN VACUUM VALVES

5

VAT Valves



GATE VALVES

General purpose valve for isolation in UHV or other demanding applications.



- Free of lubricants
- Low particle generation
- Low shock
- Vulcanized gate seal

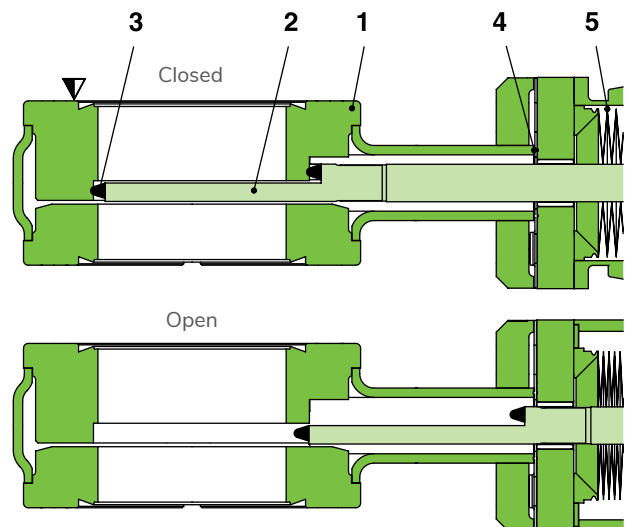
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Mini UHV Gate Valve, Series 01.0

Main Features

Sizes:	DN 16-50 mm (0.625" to 2")
Actuators:	Manual with turning handle Pneumatic: double acting
Body Material:	Stainless steel
Feedthrough:	Bellows
Standard Flanges:	ISO-QF (ISO-KF), CF-F
Sealing Technology:	MONOVAT
Sealing Gate:	FKM (VITON®)
Body Leak Rate	< 5 . 10 ⁻¹⁰ mbar ls ⁻¹
Seat Leak Rate:	< 1 . 10 ⁻⁹ mbar ls ⁻¹
Service Cycle:	50,000 cycles

Functional Principle



- 1 - Valve body
- 2 - Gate
- 3 - Gate Seal
- 4 - Bonnet Seal
- 5 - Bellows

Technical Data

Leak rate	Valve body Valve seat	$< 5 \cdot 10^{-10}$ mbar ls ⁻¹ $< 1 \cdot 10^{-9}$ mbar ls ⁻¹
Pressure range		1 · 10 ⁻¹⁰ mbar to 2 bar (abs)
Differential pressure on the gate		≤ 2 bar
Differential pressure at opening		≤ 30 mbar
Cycles until first service		50 000
Temperature ¹⁾	Valve body Manual actuator Pneumatic actuator Solenoid valve Position indicator	≤ 250 °C open / ≤ 200 °C closed ≤ 250 °C ≤ 200 °C ≤ 50 °C ≤ 80 °C
Heating and cooling rate		≤ 50 °C h ⁻¹
Material	Valve body Mechanism Bellows	AISI 304 (1.4301), AISI 316L (1.4435) AISI 304 (1.4301), AISI 316L (1.4435)
Seal	Bonnet Gate	metal FKM (Viton®)
Feedthrough		bellows
Mounting position		any
Solenoid valve	Actuator double acting	24 V DC, 5.4 W (others on request)
Position indicator: contact rating	Voltage Current	≤ 250 V AC ≤ 50 V DC ≤ 5 A ≤ 3 A
Valve position indication		visual (mechanical)

				Valve with manual actuator			Valve with pneumatic actuator								
DN (nominal I. D.)		Conductance (molecular flow) (depending on A-dimension and flange type)		Turns per stroke	Weight		Compressed air m ³ – max. overpressure		Volume of pneumatic actuator	Closing or opening time	Weight				
mm	inch	ls ⁻¹	ls ⁻¹		kg	lbs	bar	psi			l	ft ³	s	kg	lbs
16	5/8	9	–	5	1.50	3.30	5–7	73–102	0.10	0.004	0.70	4.20	9.26	2.20	4.85
25	1	38	–	5	1.50	3.30	5–7	73–102	0.10	0.004	0.70	4.20	9.26	2.20	4.85
40	1 1/2	160	220	5	1.50	3.30	5–7	73–102	0.10	0.004	0.70	4.20	9.26	2.20	4.85
50	2	160	–	5	1.50	3.30	5–7	73–102	0.10	0.004	0.70	4.20	9.26	2.20	4.85

¹⁾Maximum values: depending on operating conditions and sealing materials.

Ordering Information

Valve with Manual Actuator

Turning Handle

PART #	SIZE (in)	SIZE (mm)	FLANGE ENDS
VAT01024-KE01	5/8	16	QF16
VAT01028-KE01	1	25	QF25
VAT01032-KE01	1 1/2	40	QF40
VAT01034-KE01	2	50	QF50
VAT01032-UE01	1 1/2	40	CF275
VAT01032-CE01	1 1/2	40	CF275 - Metric



Valve with Pneumatic Actuator

Double Acting

Without Solenoid Valve

With Position Indicator

PART #	SIZE (in)	SIZE (mm)	FLANGE ENDS
VAT01024-KE24	5/8	16	QF16
VAT01028-KE24	1	25	QF25
VAT01032-KE24	1 1/2	40	QF40
VAT01034-KE24	2	50	QF50
VAT01032-UE24	1 1/2	40	CF275
VAT01032-CE24	1 1/2	40	CF275 - Metric



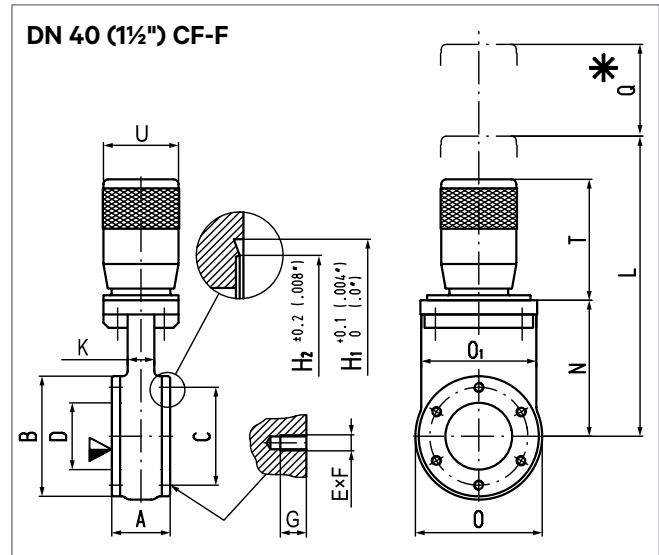
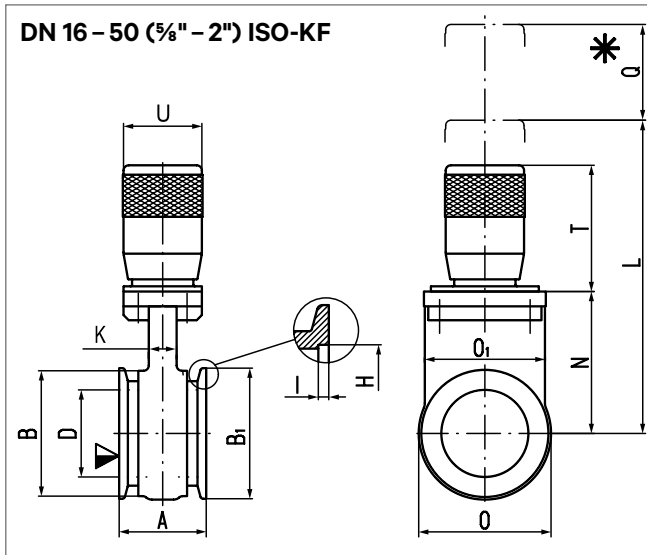
ORDERING NOTE: 120V AC & 24V DC Solenoids are available upon request.

Service Kit for Mini UHV Gate Valve, Series 01.0

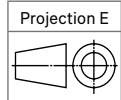
PART #	DESCRIPTION
VAT91984-R1	Service Kit for Mini UHV Gate Valves, Series 01.0

5 Mini UHV Gate Valve, Series 01.0

Dimensions: Valve with Manual Actuator



- ▼ Valve seat side
- * Required for dismantling
- ⊙ Compressed air connection
- ⊕ Electrical connection
- ⊖ Mechanical position indication
- ⊖ Emergency operation

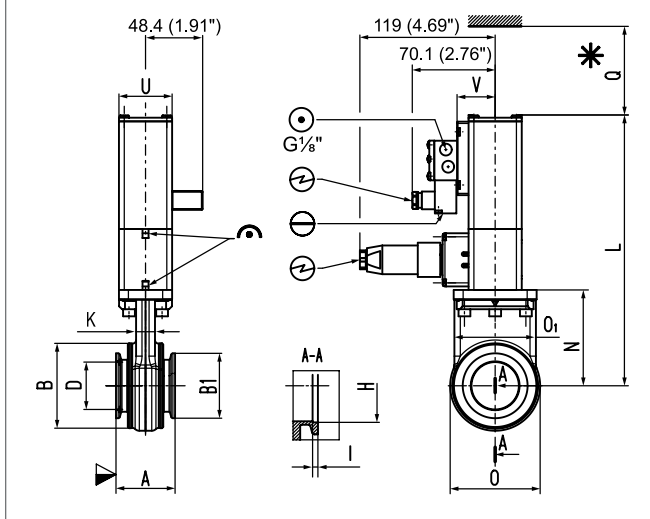


DN	mm inch	16 5/8	25 1	40 1 1/2	50 (ID 40) 2 (ID 1.57)
A	mm inch	50 1.97	50 1.97	50 1.97	50 1.97
B	mm inch	71.80 2.83	71.80 2.83	71.80 2.83	71.80 2.83
B1	mm inch	29.90 1.18	39.90 1.57	54.90 2.16	74.90 2.95
D	mm inch	16.10 0.63	25.10 0.99	40.10 1.58	40.10 1.58
H	mm inch	17.30 0.68	26.30 1.04	41.30 1.63	52.30 2.06
I	mm inch	3 0.12	3 0.12	3 0.12	3 0.12
K	mm inch	16 0.63	16 0.63	16 0.63	16 0.63
L	mm inch	197.80 7.79	197.80 7.79	197.80 7.79	197.80 7.79
N	mm inch	81.30 3.20	81.30 3.20	81.30 3.20	81.30 3.20
O	mm inch	76.20 3	76.20 3	76.20 3	76.20 3
O1	mm inch	70.20 2.76	70.20 2.76	70.20 2.76	70.20 2.76
Q	mm inch	55 2.17	55 2.17	55 2.17	55 2.17
T	mm inch	73.50 2.89	73.50 2.89	73.50 2.89	73.50 2.89
U	mm inch	45.80 1.80	45.80 1.80	45.80 1.80	45.80 1.80

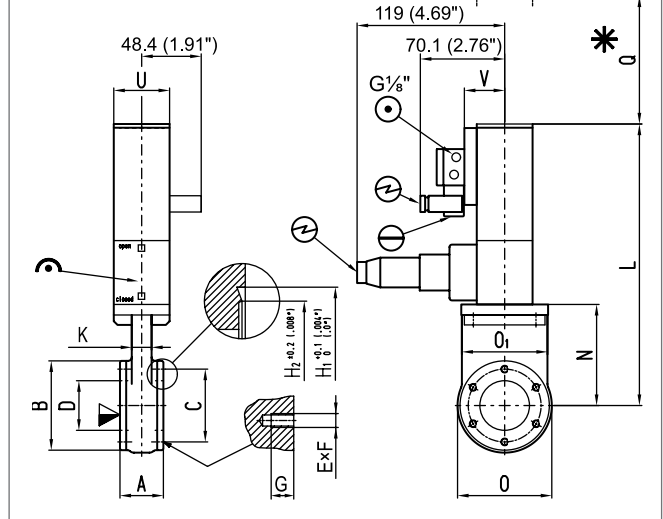
DN	mm inch	40 1 1/2
A	mm inch	35 1.38
B	mm inch	71.80 2.83
C	mm inch	58.70 2.31
D	mm inch	40.10 1.58
E x F		6 x M6 6 x 1/4"-28 UNF
G	mm inch	7 0.28
H1	mm inch	48.35 1.90
H2	mm inch	42 1.65
K	mm inch	16 0.63
L	mm inch	197.80 7.79
N	mm inch	81.30 3.20
O	mm inch	76.20 3
O1	mm inch	70.20 2.76
Q	mm inch	55 2.17
T	mm inch	73.50 2.89
U	mm inch	45.80 1.80

Dimensions: Valve with Pneumatic Actuator - Double Acting

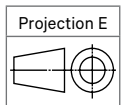
DN 16 – 50 (5/8" – 2") ISO-KF



DN 40 (1 1/2") CF-F



- ▽ Valve seat side
- * Required for dismantling
- ⊙ Compressed air connection
- ⊖ Electrical connection
- ↻ Mechanical position indication
- ⊖ Emergency operation



DN	mm inch	16 5/8	25 1	40 1 1/2	50 (ID 40) 2 (ID 1.57)
A	mm inch	50 1.97	50 1.97	50 1.97	50 1.97
B	mm inch	71.80 2.83	71.80 2.83	71.80 2.83	71.80 2.83
B1	mm inch	29.90 1.18	39.90 1.57	54.90 2.16	74.90 2.95
D	mm inch	16.10 0.63	25.10 0.99	40.10 1.58	40.10 1.58
H	mm inch	17.30 0.68	26.30 1.04	41.30 1.63	52.30 2.06
I	mm inch	3 0.12	3 0.12	3 0.12	3 0.12
K	mm inch	16 0.63	16 0.63	16 0.63	16 0.63
L	mm inch	229.10 9.02	229.10 9.02	229.10 9.02	229.10 9.02
N	mm inch	81.30 3.20	81.30 3.20	81.30 3.20	81.30 3.20
O	mm inch	76.20 3	76.20 3	76.20 3	76.20 3
O1	mm inch	70.20 2.76	70.20 2.76	70.20 2.76	70.20 2.76
Q	mm inch	55 2.17	55 2.17	55 2.17	55 2.17
U	mm inch	45 1.77	45 1.77	45 1.77	45 1.77
V	mm inch	32.30 1.27	32.30 1.27	32.30 1.27	32.30 1.27

DN	mm inch	40 1 1/2
A	mm inch	35 1.38
B	mm inch	71.80 2.83
C	mm inch	58.70 2.31
D	mm inch	40.10 1.58
E x F		6 x M6 6 x 1/4"-28 UNF
G	mm inch	7 0.28
H1	mm inch	48.35 1.90
H2	mm inch	42 1.65
K	mm inch	16 0.63
L	mm inch	229.10 9.02
N	mm inch	81.30 3.20
O	mm inch	76.20 3
O1	mm inch	70.20 2.76
Q	mm inch	55 2.16
U	mm inch	45 1.77
V	mm inch	32.30 1.27

Mini UHV Gate Valve, Series 01.0

General purpose valve for isolation in vacuum applications.



Manual

Pneumatic

Low cost

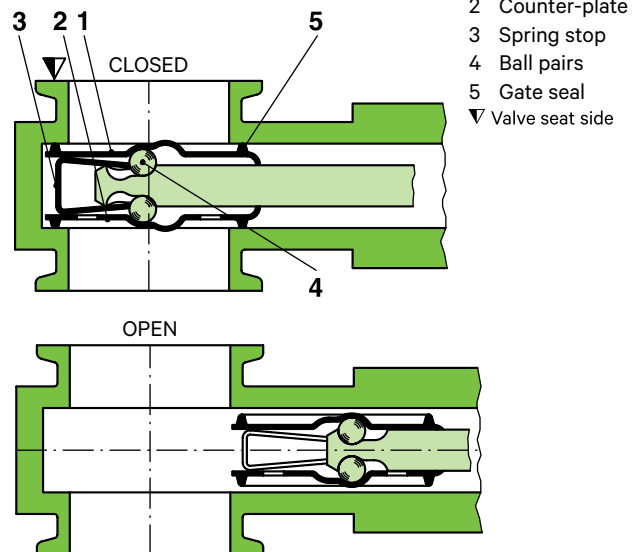
Compact and simple design

Mechanically locked in closed position

Main Features

Sizes	DN 16 – 50 mm (5/8" – 2")
Actuators	manual with toggle lever pneumatic: double acting
Body material	aluminum
Feedthrough	shaft feedthrough
Standard flanges	ISO-QF (ISO-KF)
Sealing technology	VATLOCK

Functional Principle



Technical Data

Leak rate	Valve body, valve seat	$< 1 \cdot 10^{-9}$ mbar ls ⁻¹
Pressure range		1 · 10 ⁻⁷ mbar to 1 bar (abs)
Differential pressure on the gate		≤ 1 bar
Differential pressure at opening		≤ 30 mbar
Cycles until first service ¹⁾		50 000
Temperature ¹⁾	Valve body Manual and pneumatic actuator Solenoid valve Position indicator	≤ 100 °C ≤ 80 °C ≤ 50 °C ≤ 80 °C
Heating and cooling rate		≤ 30 °C h ⁻¹
Material	Valve body Gate	EN AW-6082 (3.2315) AISI 301 (1.4310)
Seal	Bonnet, gate	FKM (Viton®)
Feedthrough		shaft feedthrough
Mounting position		any
Solenoid valve		24 V DC, 5.4 W (others on request)
Position indicator: contact rating	Voltage Current Power	≤ 50 V AC/DC ≤ 0.1 A max. 10 W
Valve position indication		visual (mechanical)

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Mini Vacuum Gate Valve, Series 01.2

DN (nominal I. D.)		Conductance (molecular flow) (depending on A-dimension and flange type)	Valve with manual actuator		Valve with pneumatic actuator						
mm	inch		Weight		Compressed air m ³ – max. overpressure		Volume of pneumatic actuator		Closing or opening time	Weight	
		ls ⁻¹	kg	lbs	bar	psi	l	ft ³	s	kg	lbs
16	5/8	10	0.40	0.90	4.5–7	65–102	0.01	0.0004	0.80	0.80	1.80
25	1	34	0.40	0.90	4.5–7	65–102	0.03	0.001	1.10	0.80	1.80
40	1 1/2	140	0.70	1.50	4.5–7	65–102	0.07	0.002	1.20	1.20	2.70
50	2	260	0.70	1.50	4.5–7	65–102	0.07	0.002	1.30	1.20	2.70

¹⁾ Maximum values: depending on operating conditions and sealing materials.

Ordering Information

Valve with Manual Actuator

Toggle Lever

PART #	SIZE (in)	SIZE (mm)	FLANGE ENDS
VAT01224-KA06	5/8	16	QF16
VAT01228-KA06	1	25	QF25
VAT01232-KA06	1 1/2	40	QF40
VAT01234-KA06	2	50	QF50



Valve with Pneumatic Actuator

Double Acting

Without Solenoid Valve

With Position Indicator

PART #	SIZE (in)	SIZE (mm)	FLANGE ENDS
VAT01224-KA24	5/8	16	QF16
VAT01228-KA24	1	25	QF25
VAT01232-KA24	1 1/2	40	QF40
VAT01234-KA24	2	50	QF50

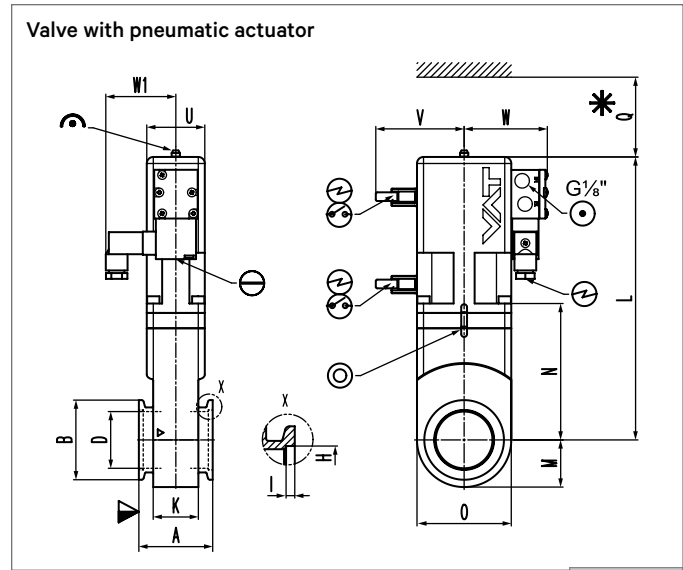
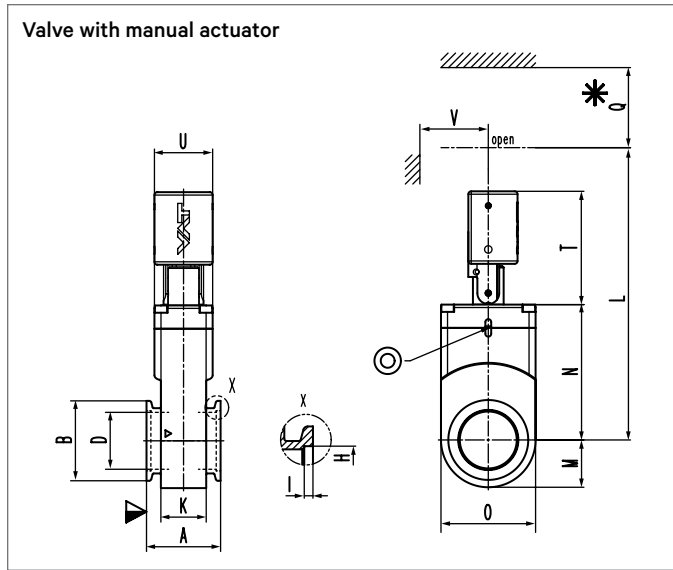


ORDERING NOTE: 120V AC & 24V DC Solenoids are available upon request.

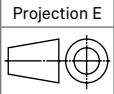
Service Kit for Mini Vacuum Gate Valve, Series 01.2

PART #	DESCRIPTION
VAT92578-R1	Service Kit for 5/8" Mini Vacuum Gate Valves, Series 01.2
VAT92554-R1	Service Kit for 1" Mini Vacuum Gate Valves, Series 01.2
VAT92485-R1	Service Kit for 1 1/2" Mini Vacuum Gate Valves, Series 01.2
VAT92523-R1	Service Kit for 2" Mini Vacuum Gate Valves, Series 01.2

Dimensions



- ▽ Valve seat side
- * Required for dismantling
- ⊙ Compressed air connection
- ⊕ Electrical connection
- ⊕ Mechanical position indication
- ⊙ Position indicator
- ⊖ Emergency operation



DN	mm inch	16 5/8	25 1	40 1 1/2	50 2
A	mm inch	40 1.57	50 1.97	51 2.01	55 2.17
B	mm inch	30 1.18	40 1.57	55 2.17	75 2.95
D	mm inch	15 0.59	24 0.94	39 1.54	49 1.93
H	mm inch	17.20 0.68	26.20 1.03	41.20 1.62	52.20 2.06
I	mm inch	3 0.12	3 0.12	3 0.12	3 0.12
K	mm inch	25 0.98	32 1.26	31 1.22	33 1.30
L	mm inch	97.30 3.83	139 5.47	200.80 7.91	235.80 9.28
M	mm inch	15 0.59	22 0.87	32.50 1.28	37.50 1.48
N	mm inch	39 1.55	58.50 2.30	93 3.66	108 4.25
O	mm inch	30 1.18	44 1.73	65 2.56	75 2.95
Q	mm inch	25 0.98	35 1.38	55 2.17	65 2.56
T	mm inch	33.30 1.31	47.50 1.87	77.80 3.06	87.80 3.46
U	mm inch	25 0.98	32 1.26	40 1.57	40 1.57
V	mm inch	20 0.79	30 1.18	47 1.85	52 2.05

DN	mm inch	16 5/8	25 1	40 1 1/2	50 2
A	mm inch	40 1.57	50 1.97	51 2.01	55 2.17
B	mm inch	30 1.18	40 1.57	55 2.17	75 2.95
D	mm inch	15 0.59	24 0.94	39 1.54	49 1.93
H	mm inch	17.20 0.68	26.20 1.03	41.20 1.62	52.20 2.06
I	mm inch	3 0.12	3 0.12	3 0.12	3 0.12
K	mm inch	25 0.98	32 1.26	31 1.22	33 1.30
L	mm inch	105 4.13	135.90 5.35	195.10 7.68	220.1 8.66
M	mm inch	15 0.59	22 0.87	32.50 1.28	37.50 1.48
N	mm inch	45.30 1.78	62.30 2.45	94 3.70	109 4.29
O	mm inch	30 1.18	44 1.73	65 2.56	75 2.95
Q	mm inch	25 0.98	35 1.38	55 2.17	65 2.56
U	mm inch	25 0.98	32 1.26	40 1.57	40 1.57
V	mm inch	52.80 2.08	57.40 2.26	60.90 2.40	64.70 2.55
W	mm inch	49.80 1.96	56.80 2.34	57.40 2.26	62.40 2.46
W1		48.40 1.91	48.40 1.91	48.30 1.90	48.30 1.90

Mini Vacuum Gate Valve, Series 01.2

The standard valve for UHV isolation applications in research and industry.



Free of lubricants

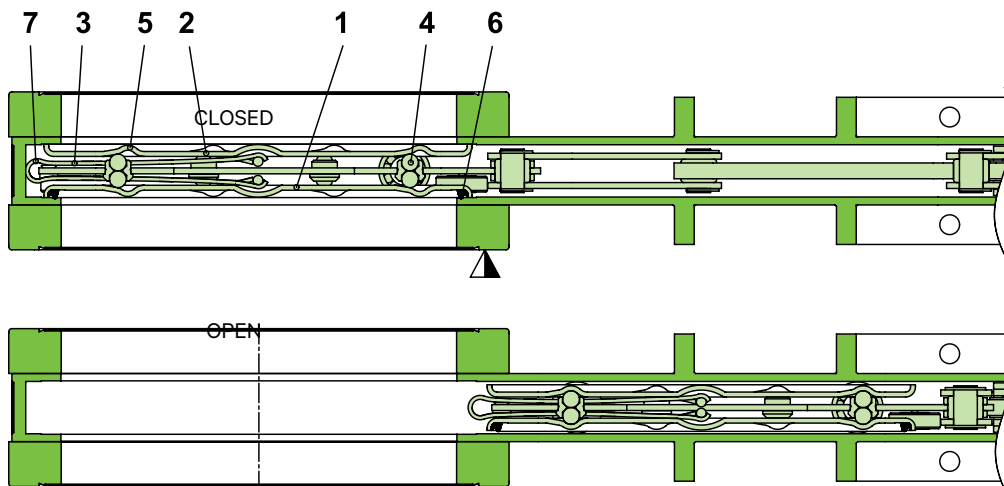
DN 63 – 200 with vulcanized gate seal

Easy maintenance

Main Features

Sizes	DN 63 – 320 mm (2½" – 12")
Actuators	manual with crank handle pneumatic: double acting
Body material	stainless steel
Feedthrough	bellows
Standard flanges	ISO-LFB (ISO-F), CF-F
Sealing technology	VATLOCK

Functional Principle



- 1 Gate
- 2 Counter-plate
- 3 Leaf springs
- 4 Ball pairs
- 5 Ball detents
- 6 Gate seal
- 7 Spring stop
- ▼ Valve seat side

Technical Data

Leak rate	Valve body Valve seat	$< 5 \cdot 10^{-10}$ mbar ls ⁻¹ $< 1 \cdot 10^{-9}$ mbar ls ⁻¹
Pressure range	DN 63 – 200 DN 250 – 320	$1 \cdot 10^{-10}$ mbar to 1.6 bar (abs) $1 \cdot 10^{-10}$ mbar to 1.2 bar (abs)
Differential pressure on the gate	DN 63 – 200 DN 250 – 320	≤ 1.6 bar ≤ 1.2 bar
Differential pressure at opening		≤ 30 mbar
Cycles until first service		50 000
Temperature ¹⁾	Valve body Manual actuator Pneumatic actuator Solenoid valve Position indicator	≤ 250 °C open / ≤ 200 °C closed ≤ 250 °C ≤ 200 °C ≤ 50 °C ≤ 80 °C
Heating and cooling rate		≤ 50 °C h ⁻¹
Material	Valve body Mechanism DN 63 – 200 DN 250 – 320 Bellows	AISI 304 (1.4301) AISI 316L (1.4404) AISI 304 (1.4301) AISI 316L (1.4404, 1.4435)
Seal	Bonnet Gate	metal FKM (Viton®)
Feedthrough		bellows
Mounting position		any
Solenoid valve		24 V DC, 5.4 W (others on request)
Position indicator: contact rating	Voltage Current	≤ 50 V AC/DC ≤ 1.2 A
Valve position indication		visual (mechanical)

DN (nominal I. D.)		Conductance (molecular flow) (depending on A-dimension and flange type)	Valve with manual actuator			Valve with pneumatic actuator						
			Turns per stroke	Weight		Compressed air m ³ – max. overpressure		Volume of pneumatic actuator		Closing or opening time	Weight	
mm	inch	ls ⁻¹	n	kg	lbs	bar	psi	l	ft ³	s	kg	lbs
63	2 ½	600	10	9	20	4 – 7	58 – 102	0.08	0.0028	1	9	20
80	3	765	10	9	20	4 – 7	58 – 102	0.08	0.0028	1	9	20
100	4	1 740	13	11	24	4 – 7	58 – 102	0.11	0.0038	1.20	12	26
160	6	5 880	17	16	35	4 – 7	58 – 102	0.14	0.0049	1.50	17	37
200	8	12 200	17	29	64	4 – 7	58 – 102	0.25	0.0087	2	29	64
250	10	21 690	40	51	112	5 – 7	73 – 102	0.35	0.0122	4	52	115
320	12	29 130	45	89	196	5 – 7	73 – 102	0.48	0.0167	5	91	200

¹⁾ Maximum values: depending on operating conditions and sealing materials.



Ordering Information

Valve with Manual Actuator
Crank Handle

PART #	SIZE (in)	SIZE (mm)	FLANGE ENDS
VAT10836-PE01	2 1/2	63	LFB63
VAT10838-PE01	3	80	LFB80
VAT10840-PE01	4	100	LFB100
VAT10844-PE01	6	160	LFB160
VAT10846-PE01	8	200	LFB200
VAT10848-PE01	10	250	LFB250
VAT10850-PE01	12	320	LFB320
VAT10836-UE01	2 1/2	63	CF450
VAT10838-UE01	3	80	CF462
VAT10840-UE01	4	100	CF600
VAT10844-UE01	6	160	CF800
VAT10846-UE01	8	200	CF1000
VAT10848-UE01	10	250	CF1200
VAT10836-CE01	2 1/2	63	CF450 - Metric
VAT10838-CE01	3	80	CF462 - Metric
VAT10840-CE01	4	100	CF600 - Metric
VAT10844-CE01	6	160	CF800 - Metric
VAT10846-CE01	8	200	CF1000 - Metric
VAT10848-CE01	10	250	CF1200 - Metric



5

UHV Gate Valve, Series 10.8

Ordering Information

Valve with Pneumatic Actuator

Double Acting
Without Solenoid Valve
With Position Indicator

PART #	SIZE (in)	SIZE (mm)	FLANGE ENDS
VAT10836-PE24	2 1/2	63	LFB63
VAT10838-PE24	3	80	LFB80
VAT10840-PE24	4	100	LFB100
VAT10844-PE24	6	160	LFB160
VAT10846-PE24	8	200	LFB200
VAT10848-PE24	10	250	LFB250
VAT10850-PE24	12	320	LFB320
VAT10836-UE24	2 1/2	63	CF450
VAT10838-UE24	3	80	CF462
VAT10840-UE24	4	100	CF600
VAT10844-UE24	6	160	CF800
VAT10846-UE24	8	200	CF1000
VAT10848-UE24	10	250	CF1200
VAT10836-CE24	2 1/2	63	CF450 - Metric
VAT10838-CE24	3	80	CF462 - Metric
VAT10840-CE24	4	100	CF600 - Metric
VAT10844-CE24	6	160	CF800 - Metric
VAT10846-CE24	8	200	CF1000 - Metric
VAT10848-CE24	10	250	CF1200 - Metric



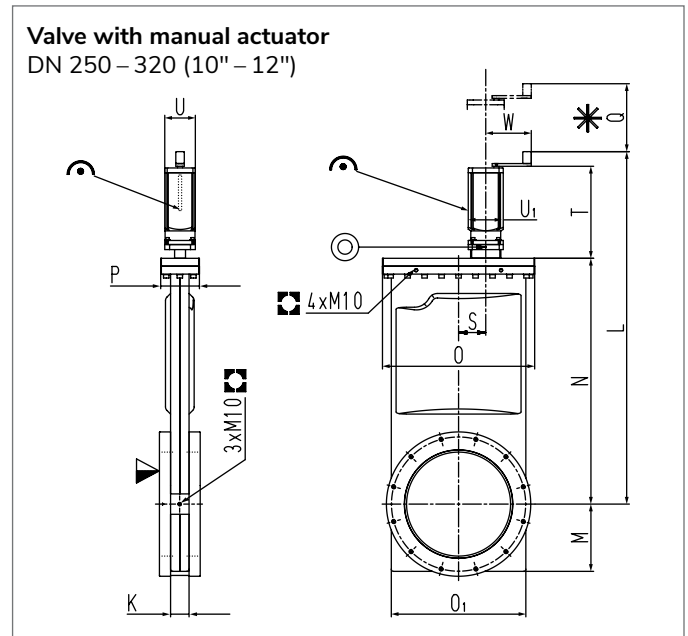
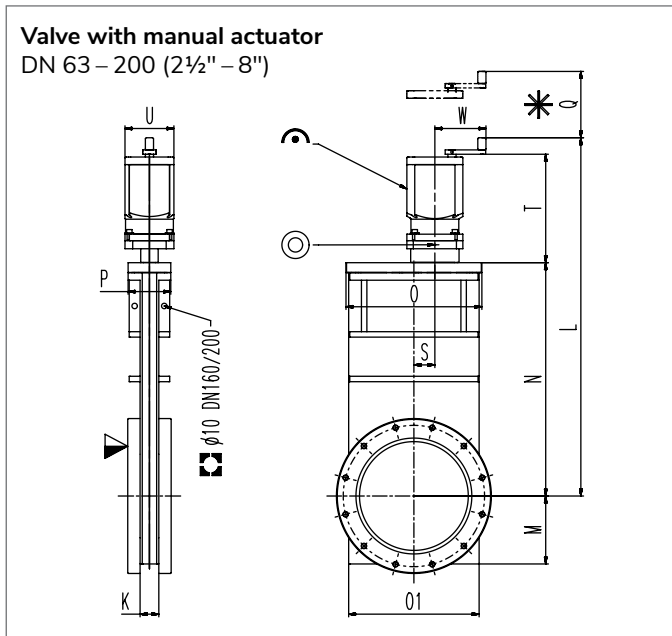
ORDERING NOTE: 120V AC & 24V DC Solenoids are available upon request.

Service Kits for UHV Gate Valves, Series 10.8

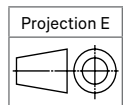
PART #	DESCRIPTION
VAT82484-R1	Gate and Bonnet Seals for 2 1/2" UHV Gate Valves, Series 10.8
VAT222591	Gate and Bonnet Seals for 3" UHV Gate Valves, Series 10.8
VAT82485-R1	Gate and Bonnet Seals for 4" UHV Gate Valves, Series 10.8
VAT82486-R1	Gate and Bonnet Seals for 6" UHV Gate Valves, Series 10.8
VAT82487-R1	Gate and Bonnet Seals for 8" UHV Gate Valves, Series 10.8
VAT82689-R1	Gate and Bonnet Seals for 10" UHV Gate Valves, Series 10.8
VAT86835-R1	Gate and Bonnet Seals for 12" UHV Gate Valves, Series 10.8

5 UHV Gate Valve, Series 10.8

Dimensions



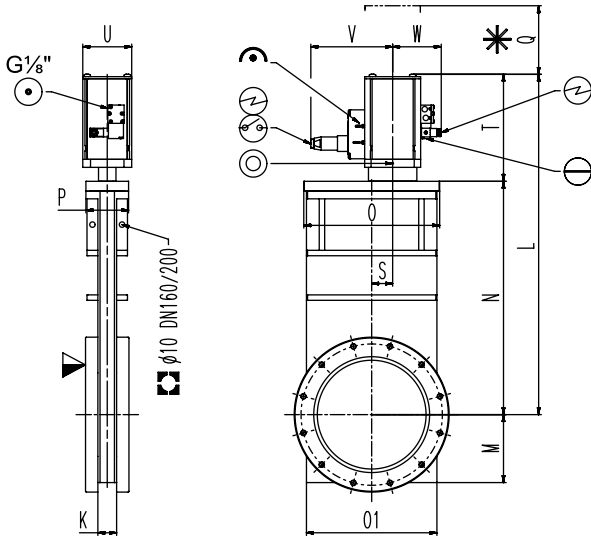
- ▽ Valve seat side
- * Required for dismantling
- ☉ Mechanical position indication
- ⊙ Leak detection hole
- For attachment



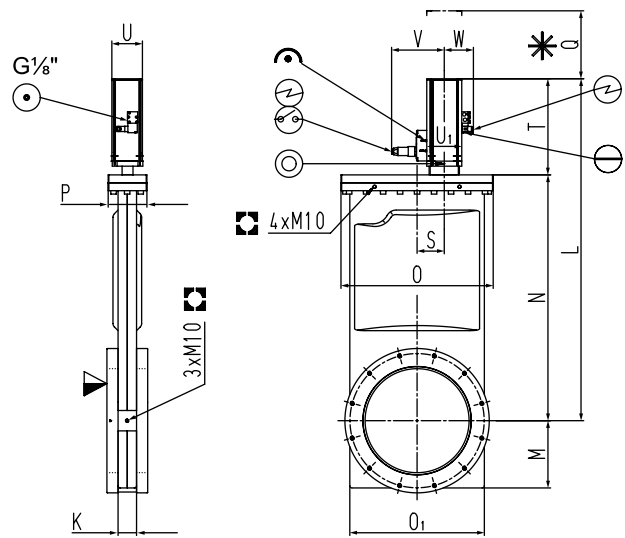
DN	mm	63	80	100	160	200	250	320
	inch	2½	3	4	6	8	10	12
K	mm	27	27	27	27	34.50	41	54
	inch	1.06	1.06	1.06	1.06	1.36	1.61	2.13
L	mm	406	421	461	551	660	841	1038
	inch	15.98	16.57	18.15	21.69	25.98	33.11	40.87
M	mm	57	57	73	99	125	160	198
	inch	2.24	2.24	2.87	3.90	4.92	6.30	7.80
N	mm	191	205	246	336	430	559	724
	inch	7.52	8.07	9.68	13.23	16.93	22.01	28.50
O	mm	115	115	145	200	250	344	448
	inch	4.53	4.53	5.71	7.87	9.84	13.54	17.64
O1	mm	112	112	143	192	240	321	396
	inch	4.41	4.41	5.63	7.56	9.45	12.64	15.59
P	mm	70	70	70	70	80	80	114
	inch	2.76	2.76	2.76	2.76	3.15	3.15	4.49
Q	mm	180	180	220	290	350	450	560
	inch	7.09	7.09	8.66	11.42	13.78	17.72	22.05
S	mm	11	11	9	25	38.50	65	80
	inch	0.43	0.43	0.35	0.98	1.52	2.56	3.15
T	mm	185	185	185	185	195	239	271
	inch	7.28	7.28	7.28	7.28	7.68	9.41	10.67
U	mm	70	70	70	70	90	90	90
	inch	2.76	2.76	2.76	2.76	3.54	3.54	3.54
U1	mm	83	83	83	83	103	103	103
	inch	3.27	3.27	3.27	3.27	4.06	4.06	4.06
W	mm	76	76	76	76	94	134	134
	inch	2.99	2.99	2.99	2.99	3.70	5.28	5.28

Main Dimensions

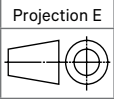
Valve with pneumatic actuator
DN 63 – 200 (2½" – 8")



Valve with pneumatic actuator
DN 250 – 320 (10" – 12")



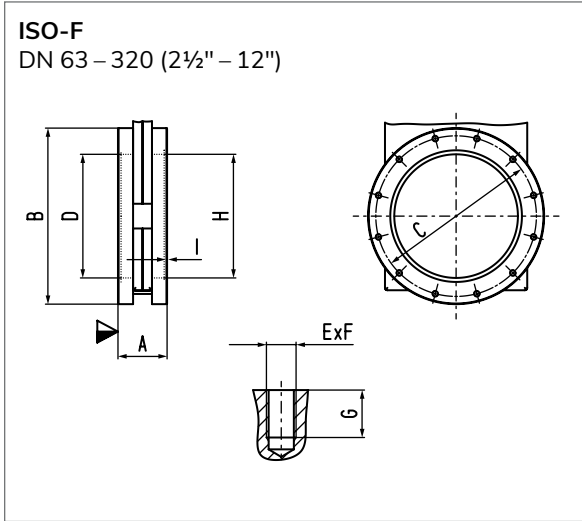
- ▼ Valve seat side
- * Required for dismantling
- ⊙ Compressed air connection
- ⊕ Electrical connection
- ↻ Mechanical position indication
- ⊙ Position indicator
- ⊙ Leak detection hole
- ⊖ Emergency operation
- For attachment



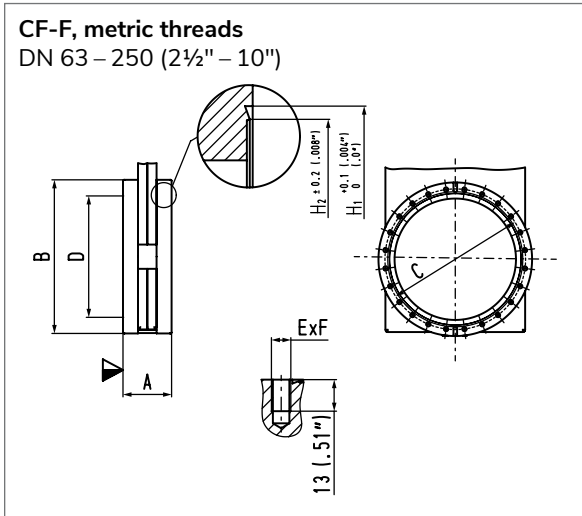
DN	mm	63	80	100	160	200	250	320
	inch	2½	3	4	6	8	10	12
K	mm	27	27	27	27	34.50	41	54
	inch	1.06	1.06	1.06	1.06	1.36	1.61	2.13
L	mm	342	358	414	521	626	796	1010
	inch	13.46	14.07	16.30	20.51	24.65	31.34	39.76
M	mm	57	57	73	99	120	161	198
	inch	2.24	2.24	2.87	3.90	4.73	6.34	7.80
N	mm	191	205	246	336	429	558	723
	inch	7.52	8.07	9.68	13.23	16.89	21.97	28.46
O	mm	115	115	145	200	250	344	448
	inch	4.53	4.53	5.71	7.87	9.84	13.54	17.64
O1	mm	112	112	143	192	230	321	396
	inch	4.41	4.41	5.63	7.56	9.06	12.64	15.59
P	mm	70	70	70	70	80	80	114
	inch	2.76	2.76	2.76	2.76	3.15	3.15	4.49
Q	mm	180	180	220	290	350	450	560
	inch	7.09	7.09	8.66	11.42	13.78	17.72	22.05
S	mm	11	11	9	25	38.50	65	80
	inch	0.43	0.43	0.35	0.98	1.52	2.44	3.15
T	mm	151	151	168	185	197	238	287
	inch	5.94	5.94	6.61	7.28	7.76	9.37	11.30
U	mm	70	70	70	70	90	90	90
	inch	2.76	2.76	2.76	2.76	3.54	3.54	3.54
U1	mm	83	83	83	83	103	103	103
	inch	3.27	3.27	3.27	3.27	4.06	4.06	4.06
V	mm	145	145	145	145	150	150	150
	inch	5.71	5.71	5.71	5.71	5.91	5.91	5.91
W	mm	80	80	80	80	89	89	89
	inch	3.15	3.15	3.15	3.15	3.50	3.50	3.50

UHV Gate Valve, Series 10.8

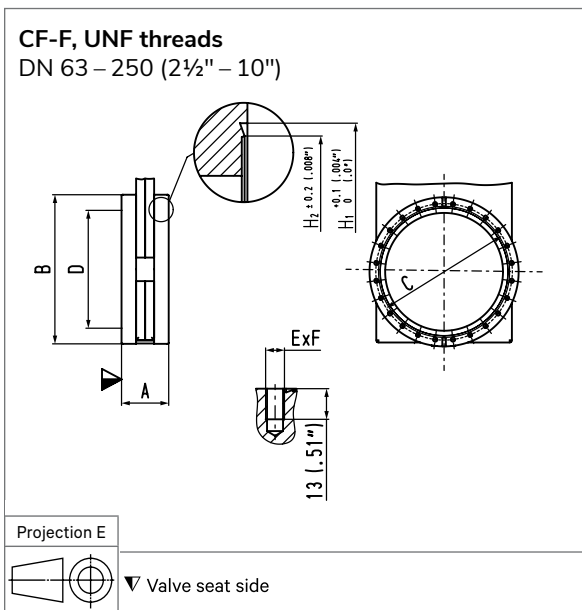
Flange Dimensions



DN	mm inch	63 2½	80 3	100 4	160 6	200 8	250 10	320 12
A	mm inch	70 2.76	70 2.76	70 2.76	70 2.76	80 3.15	100 3.94	120 4.72
B	mm inch	130 5.12	45 5.71	165 6.50	225 8.86	285 11.22	350 13.78	425 16.73
C	mm inch	110 4.33	125 4.92	145 5.71	200 7.87	260 10.24	310 12.20	395 15.55
D	mm inch	70 2.76	76 2.99	100 3.94	150 5.91	200 7.87	261 10.28	306 12.05
E x F		4 x M8	8 x M8	8 x M8	8 x M10	12 x M10	12 x M10	12 x M12
G	mm inch	13 0.51	13 0.51	13 0.51	13 0.51	15 0.59	15 0.59	18 0.71
H	mm inch	-	83 3.27	102 4.02	153 6.02	213 8.39	-	318 12.52
I	mm inch	-	3 0.12	3 0.12	5 0.20	5 0.20	-	5 0.20



DN	mm inch	63 2½	80 3	100 4	160 6	200 8	250 10	
O. D.	inch	4½	4⅝	6	8	10	12	
A	mm inch	70 2.76	70 2.76	70 2.76	70 2.76	80 3.15	100 3.94	
B	mm inch	113.50 4.47	117.50 4.63	151.60 5.97	202.40 7.97	253.20 9.97	350 13.78	
C	mm inch	92.10 3.63	102.40 4.03	130.20 5.13	181 7.13	231.80 9.13	284 11.18	
D	mm inch	70 2.76	76 2.99	100 3.94	150 5.91	200 7.87	254 10.00	
E x F		8 x M8	10 x M8	16 x M8	20 x M8	24 x M8	32 x M8	
H1	mm inch	82.50 3.25	91.65 3.61	120.70 4.75	171.45 6.75	222.40 8.76	273.15 10.75	
H2	mm inch	77.40 3.05	86.30 3.40	115.50 4.55	166 6.54	217 8.54	267 10.51	



DN	mm inch	63 2½	80 3	100 4	160 6	200 8	250 ¹⁾ 10	250 ²⁾ 10
O. D.	mm inch	4½	4⅝	6	8	10	12 ¹⁾	13¼ ²⁾
A	mm inch	70 2.76	70 2.76	70 2.76	70 2.76	80 3.15	100 3.94	100 3.94
B	mm inch	113.50 4.47	117.50 4.63	151.60 5.97	202.40 7.97	253.20 9.97	350 13.78	350 13.78
C	mm inch	92.10 3.63	102.40 4.03	130.20 5.13	181 7.13	231.80 9.13	284 11.18	306.30 12.06
D	mm inch	70 2.76	76 2.99	100 3.94	150 5.91	200 7.87	254 10.00	254 10.00
E x F		8 x 5/16" 24 UNF	10 x 5/16" 24 UNF	16 x 5/16" 24 UNF	20 x 5/16" 24 UNF	24 x 5/16" 24 UNF	32 x 5/16" 24 UNF	30 x 3/8" 24 UNF
H1	mm inch	82.50 3.25	91.65 3.61	120.70 4.75	171.45 6.75	222.40 8.76	273.15 10.75	294.64 11.60
H2	mm inch	77.40 3.05	86.30 3.40	115.50 4.55	166 6.54	217 8.54	267 10.51	288.30 11.35

¹⁾ VAT standard O. D. 12"

²⁾ Option O. D. 13¼": Ordering No. 10848-UE44-X, X = O. D. 13¼"

General purpose valve for isolation in high vacuum systems. Especially suited to pump isolation.



Good value bellows sealed valve
 DN 63 – 200 with vulcanized gate seal
 High life cycle

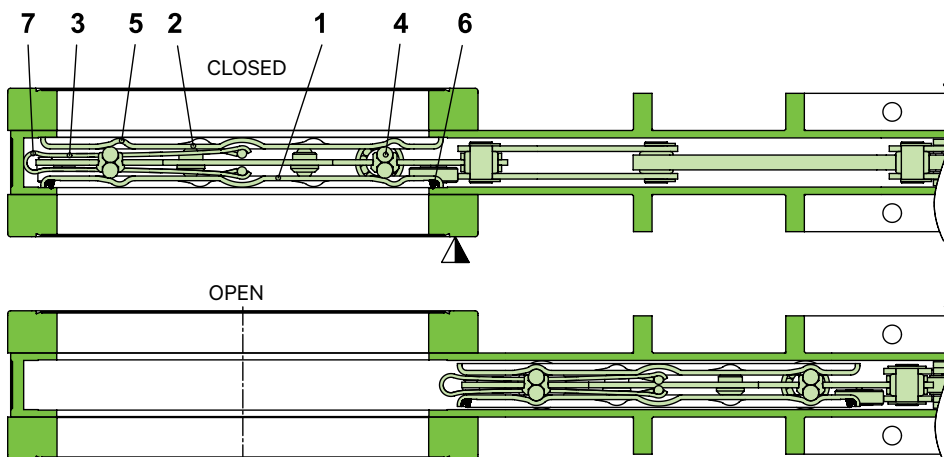
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HV Gate Valve, Series 11.0

Main Features

Sizes	DN 63 – 320 mm (2½" – 12")
Actuators	manual with crank handle pneumatic: double acting
Body material	stainless steel
Feedthrough	bellows
Standard flanges	ISO-LFB (ISO-F), CF-F
Sealing technology	VATLOCK

Functional Principle



- 1 Gate
- 2 Counter-plate
- 3 Leaf springs
- 4 Ball pairs
- 5 Ball detents
- 6 Gate seal
- 7 Spring stop
- ▼ Valve seat side

Technical Data

Leak rate	Valve body, valve seat	$< 1 \cdot 10^{-9}$ mbar ls ⁻¹
Pressure range	DN 63 – 200 DN 250 – 320	1 · 10 ⁻⁸ mbar to 1.6 bar (abs) 1 · 10 ⁻⁸ mbar to 1.2 bar (abs)
Differential pressure on the gate	DN 63 – 200 DN 250 – 320	≤ 1.6 bar ≤ 1.2 bar
Differential pressure at opening		≤ 30 mbar
Cycles until first service		200 000
Temperature ¹⁾	Valve body Manual and pneumatic actuator Solenoid valve Position indicator	≤ 150 °C ≤ 80 °C ≤ 50 °C ≤ 50 °C
Heating and cooling rate		≤ 50 °C h ⁻¹
Material	Valve body Mechanism DN 63 – 200 DN 250 – 320 Bellows	AISI 304 (1.4301) AISI 316L (1.4404) AISI 304 (1.4301) AISI 633 (AM350)
Seal	Bonnet, gate	FKM (Viton®)
Feedthrough		bellows
Mounting position		any
Solenoid valve		24 V DC, 5.4 W (others on request)
Position indicator: contact rating	Voltage Current	≤ 50 V AC/DC ≤ 1.2 A
Valve position indication		visual (mechanical)

DN (nominal I. D.)		Conductance (molecular flow) (depending on A-dimension and flange type)	Valve with manual actuator			Valve with pneumatic actuator						
			Turns per stroke	Weight		Compressed air m ³ – max. overpressure		Volume of pneumatic actuator		Closing or opening time	Weight	
mm	inch	ls ⁻¹	n	kg	lbs	bar	psi	l	ft ³	s	kg	lbs
63	2 ½	600	10	9	20	4 – 7	58 – 102	0.08	0.0028	1	9	20
80	3	765	10	9	20	4 – 7	58 – 102	0.08	0.0028	1	9	20
100	4	1 740	13	11	24	4 – 7	58 – 102	0.11	0.0038	1.20	12	26
160	6	5 880	17	16	35	4 – 7	58 – 102	0.14	0.0049	1.50	17	37
200	8	12 200	17	29	64	4 – 7	58 – 102	0.25	0.0087	2	29	64
250	10	21 690	40	51	112	5 – 7	73 – 102	0.35	0.0122	4	52	115
320	12	29 130	45	89	196	5 – 7	73 – 102	0.48	0.0167	5	91	200

¹⁾ Maximum values: depending on operating conditions and sealing materials.

Ordering Information

Valve with Manual Actuator
Crank Handle

PART #	SIZE (in)	SIZE (mm)	FLANGE ENDS
VAT11036-PE01	2 1/2	63	LFB63
VAT11038-PE01	3	80	LFB80
VAT11040-PE01	4	100	LFB100
VAT11044-PE01	6	160	LFB160
VAT11046-PE01	8	200	LFB200
VAT11048-PE01	10	250	LFB250
VAT11050-PE01	12	320	LFB320
VAT11036-UE01	2 1/2	63	CF450
VAT11038-UE01	3	80	CF462
VAT11040-UE01	4	100	CF600
VAT11044-UE01	6	160	CF800
VAT11046-UE01	8	200	CF1000
VAT11048-UE01	10	250	CF1200
VAT11036-CE01	2 1/2	63	CF450 - Metric
VAT11038-CE01	3	80	CF462 - Metric
VAT11040-CE01	4	100	CF600 - Metric
VAT11044-CE01	6	160	CF800 - Metric
VAT11046-CE01	8	200	CF1000 - Metric
VAT11048-CE01	10	250	CF1200 - Metric



5

HV Gate Valve, Series 11.0

Ordering Information

Valve with Pneumatic Actuator

Double Acting
Without Solenoid Valve
With Position Indicator

PART #	SIZE (in)	SIZE (mm)	FLANGE ENDS
VAT11036-PE24	2 1/2	63	LFB63
VAT11038-PE24	3	80	LFB80
VAT11040-PE24	4	100	LFB100
VAT11044-PE24	6	160	LFB160
VAT11046-PE24	8	200	LFB200
VAT11048-PE24	10	250	LFB250
VAT11050-PE24	12	320	LFB320
VAT11036-UE24	2 1/2	63	CF450
VAT11038-UE24	3	80	CF462
VAT11040-UE24	4	100	CF600
VAT11044-UE24	6	160	CF800
VAT11046-UE24	8	200	CF1000
VAT11048-UE24	10	250	CF1200
VAT11036-CE24	2 1/2	63	CF450 - Metric
VAT11038-CE24	3	80	CF462 - Metric
VAT11040-CE24	4	100	CF600 - Metric
VAT11044-CE24	6	160	CF800 - Metric
VAT11046-CE24	8	200	CF1000 - Metric
VAT11048-CE24	10	250	CF1200 - Metric



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HV Gate Valve, Series 11.0

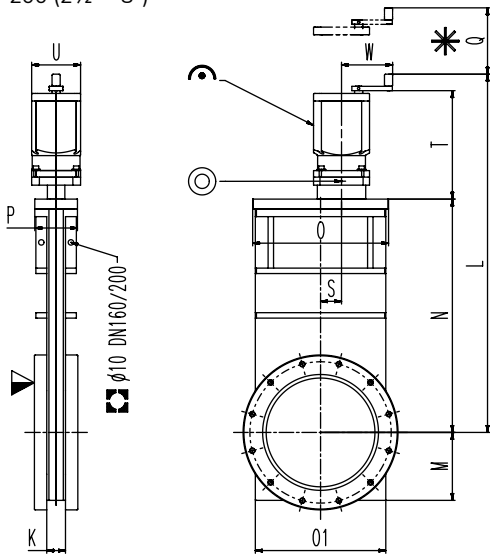
ORDERING NOTE: 120V AC & 24V DC Solenoids are available upon request.

Service Kits for HV Gate Valves, Series 11.0

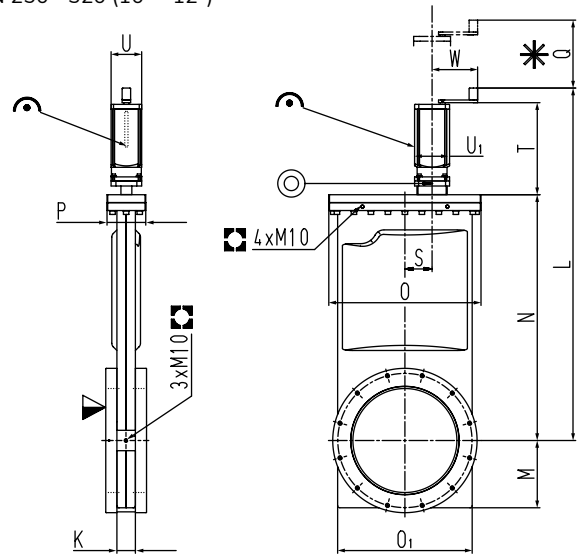
PART #	DESCRIPTION
VAT416947	Gate and Bonnet Seals for 2 1/2" HV Gate Valves, Series 11.0
VAT416948	Gate and Bonnet Seals for 3" HV Gate Valves, Series 11.0
VAT416949	Gate and Bonnet Seals for 4" HV Gate Valves, Series 11.0
VAT423178	Gate and Bonnet Seals for 6" HV Gate Valves, Series 11.0
VAT561716	Gate and Bonnet Seals for 8" HV Gate Valves, Series 11.0
VAT416952	Gate and Bonnet Seals for 10" HV Gate Valves, Series 11.0
VAT436855	Gate and Bonnet Seals for 12" HV Gate Valves, Series 11.0

Main Dimensions

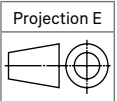
Valve with manual actuator
DN 63 – 200 (2½" – 8")



Valve with manual actuator
DN 250 – 320 (10" – 12")



- ▼ Valve seat side
- * Required for dismantling
- ⤵ Mechanical position indication
- ⊙ Leak detection hole
- For attachment

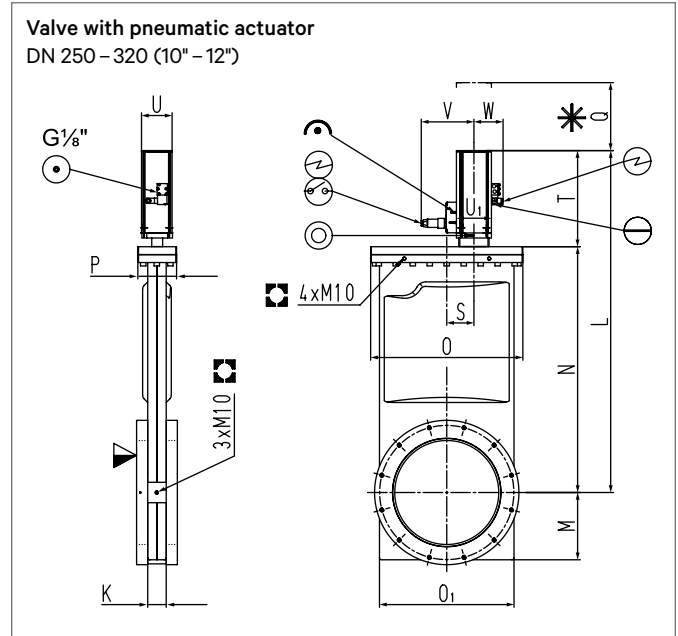
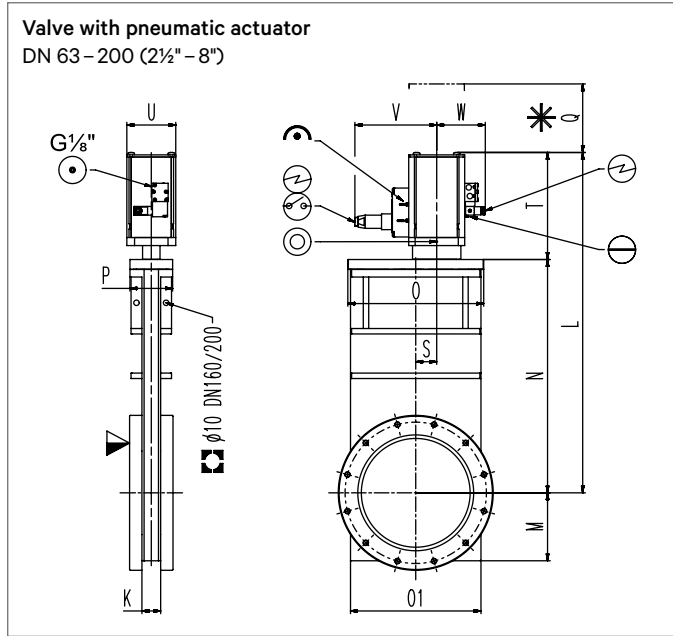


DN	mm	63	80	100	160	200	250	320
	inch	2½	3	4	6	8	10	12
K	mm	27	27	27	27	34.50	41	54
	inch	1.06	1.06	1.06	1.06	1.36	1.61	2.13
L	mm	406	421	461	551	660	841	1038
	inch	15.98	16.57	18.15	21.69	25.98	33.11	40.87
M	mm	57	57	73	99	125	160	198
	inch	2.24	2.24	2.87	3.90	4.92	6.30	7.80
N	mm	191	205	246	336	430	559	724
	inch	7.52	8.07	9.68	13.23	16.93	22.01	28.50
O	mm	115	115	145	200	250	344	448
	inch	4.53	4.53	5.71	7.87	9.84	13.54	17.64
O1	mm	112	112	143	192	240	321	396
	inch	4.41	4.41	5.63	7.56	9.45	12.64	15.59
P	mm	70	70	70	70	80	80	114
	inch	2.76	2.76	2.76	2.76	3.15	3.15	4.49
Q	mm	180	180	220	290	350	450	560
	inch	7.09	7.09	8.66	11.42	13.78	17.72	22.05
S	mm	11	11	9	25	38.50	65	80
	inch	0.43	0.43	0.35	0.98	1.52	2.56	3.15
T	mm	185	185	185	185	195	239	271
	inch	7.28	7.28	7.28	7.28	7.68	9.41	10.67
U	mm	70	70	70	70	90	90	90
	inch	2.76	2.76	2.76	2.76	3.54	3.54	3.54
U1	mm	83	83	83	83	103	103	103
	inch	3.27	3.27	3.27	3.27	4.06	4.06	4.06
W	mm	76	76	76	76	94	134	134
	inch	2.99	2.99	2.99	2.99	3.70	5.28	5.28

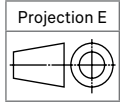
HV Gate Valve, Series 11.0

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Main Dimensions

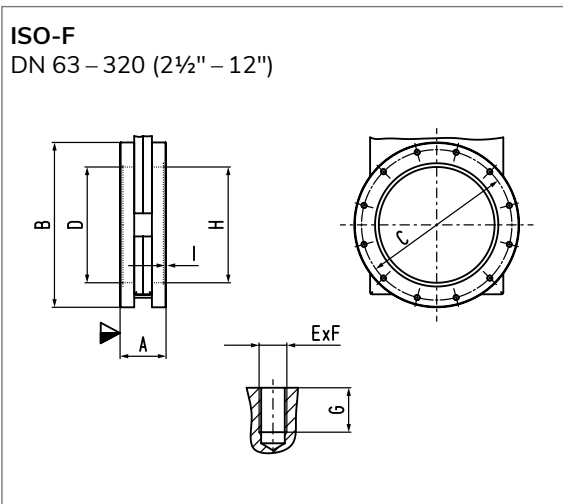


- ▼ Valve seat side
- * Required for dismantling
- ⊙ Compressed air connection
- ⊕ Electrical connection
- ⊖ Mechanical position indication
- ⊙ Position indicator
- ⊙ Leak detection hole
- ⊖ Emergency operation
- For attachment

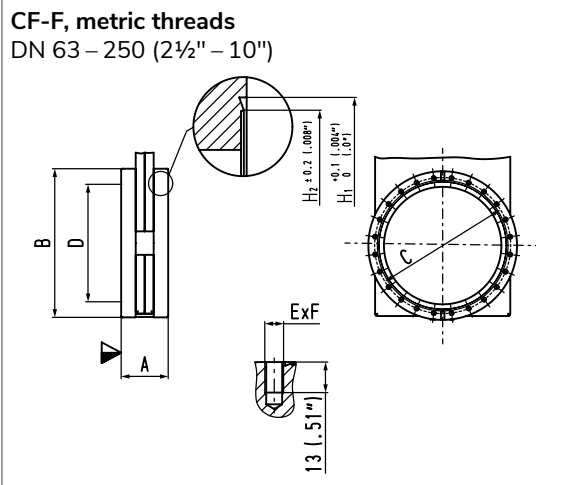


DN	mm	inch	63	80	100	160	200	250	320
			2½	3	4	6	8	10	12
K	mm	inch	27	27	27	27	34.50	41	54
			1.06	1.06	1.06	1.06	1.36	1.61	2.13
L	mm	inch	342	358	414	521	626	796	1010
			13.46	14.07	16.30	20.51	24.65	31.34	39.76
M	mm	inch	57	57	73	99	120	161	198
			2.24	2.24	2.87	3.90	4.73	6.34	7.80
N	mm	inch	191	205	246	336	429	558	723
			7.52	8.07	9.68	13.23	16.89	21.97	28.46
O	mm	inch	115	115	145	200	250	344	448
			4.53	4.53	5.71	7.87	9.84	13.54	17.64
O1	mm	inch	112	112	143	192	230	321	396
			4.41	4.41	5.63	7.56	9.06	12.64	15.59
P	mm	inch	70	70	70	70	80	80	114
			2.76	2.76	2.76	2.76	3.15	3.15	4.49
Q	mm	inch	180	180	220	290	350	450	560
			7.09	7.09	8.66	11.42	13.78	17.72	22.05
S	mm	inch	11	11	9	25	38.50	65	80
			0.43	0.43	0.35	0.98	1.52	2.44	3.15
T	mm	inch	151	151	168	185	197	238	287
			5.94	5.94	6.61	7.28	7.76	9.37	11.30
U	mm	inch	70	70	70	70	90	90	90
			2.76	2.76	2.76	2.76	3.54	3.54	3.54
U1	mm	inch	83	83	83	83	103	103	103
			3.27	3.27	3.27	3.27	4.06	4.06	4.06
V	mm	inch	145	145	145	145	150	150	150
			5.71	5.71	5.71	5.71	5.91	5.91	5.91
W	mm	inch	80	80	80	80	89	89	89
			3.15	3.15	3.15	3.15	3.50	3.50	3.50

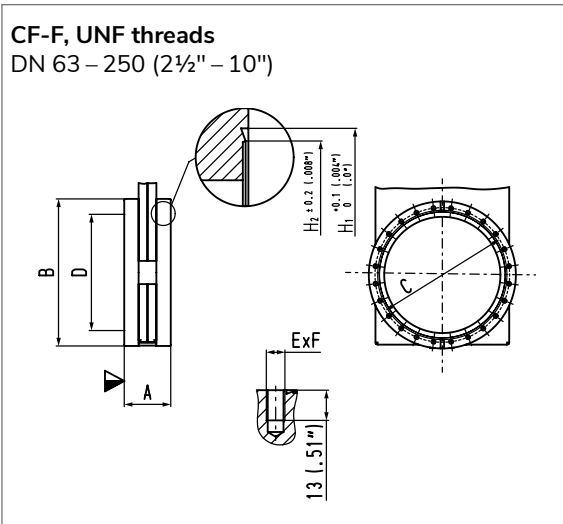
Flange Dimensions



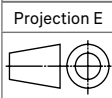
DN	mm inch	63 2½	80 3	100 4	160 6	200 8	250 10	320 12
A	mm inch	70 2.76	70 2.76	70 2.76	70 2.76	80 3.15	100 3.94	120 4.72
B	mm inch	130 5.12	145 5.71	165 6.50	225 8.86	285 11.22	350 13.78	425 16.73
C	mm inch	110 4.33	125 4.92	145 5.71	200 7.87	260 10.24	310 12.20	395 15.55
D	mm inch	70 2.76	76 2.99	100 3.94	150 5.91	200 7.87	261 10.28	306 12.05
E × F		4 × M8	8 × M8	8 × M8	8 × M10	12 × M10	12 × M10	12 × M12
G	mm inch	13 0.51	13 0.51	13 0.51	13 0.51	15 0.59	15 0.59	18 0.71
H	mm inch	-	83 3.27	102 4.02	153 6.02	213 8.39	-	318 12.52
I	mm inch	-	3 0.12	3 0.12	5 0.20	5 0.20	-	5 0.20



DN	mm inch	63 2½	80 3	100 4	160 6	200 8	250 10	
O.D.	inch	4½	4 5/8	6	8	10	12	
A	mm inch	70 2.76	70 2.76	70 2.76	70 2.76	80 3.15	100 3.94	
B	mm inch	113.50 4.47	117.50 4.63	151.60 5.97	202.40 7.97	253.20 9.97	350 13.78	
C	mm inch	92.10 3.63	102.40 4.03	130.20 5.13	181 7.13	231.80 9.13	284 11.18	
D	mm inch	70 2.76	76 2.99	100 3.94	150 5.91	200 7.87	254 10.00	
E × F		8 × M8	10 × M8	16 × M8	20 × M8	24 × M8	32 × M8	
H1	mm inch	82.50 3.25	91.65 3.61	120.70 4.75	171.45 6.75	222.40 8.76	273.15 10.75	
H2	mm inch	77.40 3.05	86.30 3.40	115.50 4.55	166 6.54	217 8.54	267 10.51	



DN	mm inch	63 2½	80 3	100 4	160 6	200 8	250 ¹⁾ 10	250 ²⁾ 10
O.D.	mm inch	4½	4 5/8	6	8	10	12 ¹⁾	13¼ ²⁾
A	mm inch	70 2.76	70 2.76	70 2.76	70 2.76	80 3.15	100 3.94	100 3.94
B	mm inch	113.50 4.47	117.50 4.63	151.60 5.97	202.40 7.97	253.20 9.97	350 13.78	350 13.78
C	mm inch	92.10 3.63	102.40 4.03	130.20 5.13	181 7.13	231.80 9.13	284 11.18	306.30 12.06
D	mm inch	70 2.76	76 2.99	100 3.94	150 5.91	200 7.87	254 10.00	254 10.00
E × F		8 × 5/16" 24 UNF	10 × 5/16" 24 UNF	16 × 5/16" 24 UNF	20 × 5/16" 24 UNF	24 × 5/16" 24 UNF	32 × 5/16" 24 UNF	30 × 3/8" 24 UNF
H1	mm inch	82.50 3.25	91.65 3.61	120.70 4.75	171.45 6.75	222.40 8.76	273.15 10.75	294.64 11.60
H2	mm inch	77.40 3.05	86.30 3.40	115.50 4.55	166 6.54	217 8.54	267 10.51	288.30 11.35



▽ Valve seat side

¹⁾ VAT standard O.D. 12"

²⁾ Option O.D. 13¼": Ordering No. 11048-UE44-X, X = O.D. 13¼"



WORLD MARKET LEADER IN VACUUM VALVES

5

VAT Angle/Poppet Valves



ANGLE/POPPET VALVES

For pumping and venting of HV systems.

Resistant against high differential pressure

Long lifetime



Manual

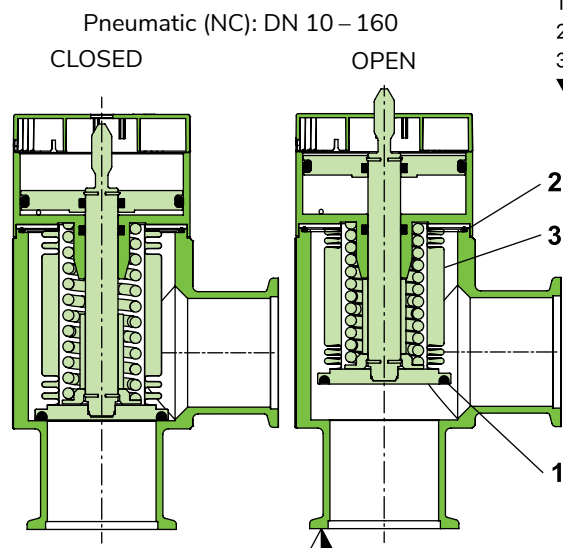
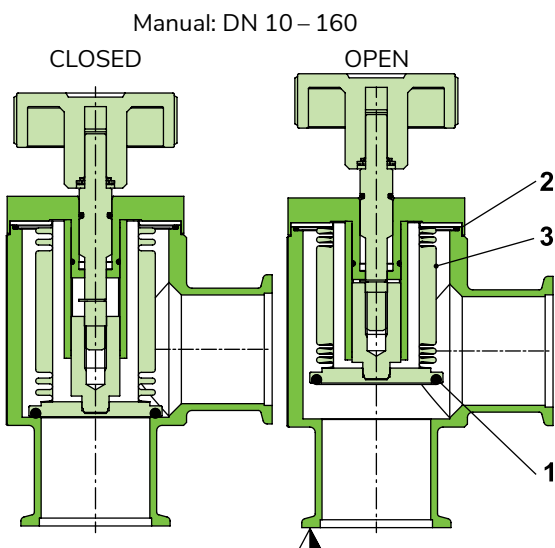


Pneumatic

Main Features

Sizes	DN 10 – 160 mm (3/8" – 6")
Actuators	manual: with removable handwheel pneumatic: single acting with closing spring (NC) or double acting
Body material	aluminum (available in stainless steel upon request)
Feedthrough	bellows
Standard flanges	ISO-QF (ISO-KF), ISO-LF (ISO-K)

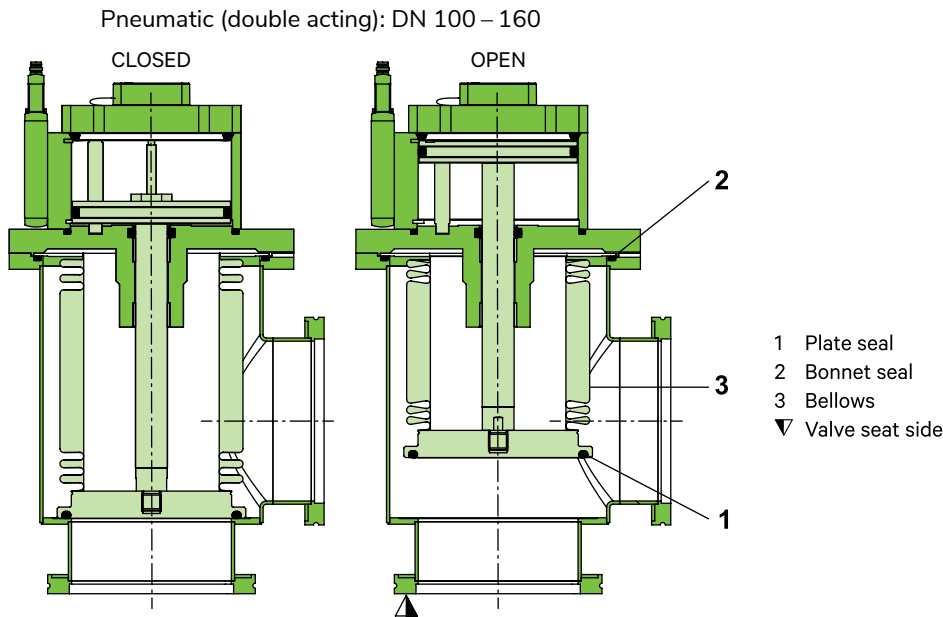
Functional Principle



- 1 Plate seal
- 2 Bonnet seal
- 3 Bellows
- ▼ Valve seat side

5 HV Angle/Inline Valve, Series 26.4 / 26.5

Functional Principle



Technical Data (Angle and Inline Valves)

Leak rate	Valve body, valve seat		$< 1 \cdot 10^{-9}$ mbar ls ⁻¹
Pressure range	Valve with manual/pneumatic actuator	DN 10 – 50	$1 \cdot 10^{-8}$ mbar to 5 bar (abs)
		DN 63 – 80	$1 \cdot 10^{-8}$ mbar to 4 bar (abs)
		DN 100 – 160	$1 \cdot 10^{-8}$ mbar to 2 bar (abs)
Differential pressure on the plate	Valve with manual/pneumatic actuator	In opening direction	
		DN 10 – 50	≤ 2.0 bar
		DN 63 – 160	≤ 1.2 bar
		In closing direction	
		DN 10 – 50	≤ 5.0 bar
	DN 63 – 80	≤ 4.0 bar	
	DN 100 – 160	≤ 2.0 bar	
Differential pressure at opening			≤ 1 bar
Cycles until first service ¹⁾	Valve with manual actuator	DN 10 – 160	10 000
	Valve with pneumatic actuator	DN 10 – 80	3 million (NC)
		DN 100 – 160	1 million (NC, double acting)
Temperature ²⁾	Valve body: valve with manual/pneumatic actuator		≤ 150 °C
	Actuator: manual/pneumatic		≤ 120 °C
	Solenoid valve & position indicator	DN 10 – 80	≤ 80 °C
		DN 100 – 160	≤ 50 °C

Continued on next page

Material	Aluminum valve body	DN 16 – 63	EN AW-6060 (3.3206), EN AW-6061 (3.3211), EN AW-6063 (3.3206), EN AW-6082 (3.2315)
	Plate	DN 80 – 160	EN AC-42000
	Bellows		AISI 316L (1.4404, 1.4435)
Seal	Bonnet, plate		AISI 316L (1.4404, 1.4435), AISI 316 Ti (1.4571)
Feedthrough			FKM (Viton®)
Mounting position			bellows
Solenoid valve		DN 10 – 80 DN 100 – 160	any
Position indicator: contact rating	Voltage: valve with manual/pneumatic actuator		24 V DC, 2.5 W (others on request)
	Current: valve with manual/pneumatic actuator		24 V DC, 1.0 W (others on request)
Operating frequency: valve with electromagnetic actuator			5 – 50 V AC / DC
Valve position indication			5 – 100 mA
			max. 15 min ⁻¹ at 20 °C
			visual (mechanical)

¹⁾ Tested at room temperature under clean and static conditions.

²⁾ Maximum values: depending on operating conditions and sealing materials.

5

HV Angle/Inline Valve, Series 26.4/26.5

Angle Valves

			with manual actuator			with pneumatic actuator, single acting with closing spring (NC)						
DN (nominal I. D.)		Conductance (molecular flow)	Turns per stroke	Weight		Compressed air m ³ – max. overpressure	Volume of pneumatic actuator	Closing time	Weight			
mm	inch			kg	lbs				kg	lbs		
10	3/8	3	3.6	–	–	4 – 8	58 – 116	0.004	0.0001	0.10	–	–
16	5/8	5	3.6	0.20	0.44	4 – 8	58 – 116	0.004	0.0001	0.10	0.28	0.62
25	1	14	3.8	0.27	0.60	4 – 8	58 – 116	0.011	0.0004	0.20	0.41	0.90
40	1 1/2	45	4.5	0.60	1.32	4 – 8	58 – 116	0.035	0.0012	0.55	0.97	2.14
50	2	80	4.8	0.94	2.07	4 – 8	58 – 116	0.047	0.0017	0.65	1.45	3.20
63	2 1/2	160	6.6	2.90	6.39	4 – 8	58 – 116	0.112	0.0040	0.70	2.90	6.39
80	3	200	6.6	3.10	6.83	4 – 8	58 – 116	0.112	0.0040	0.70	3.10	6.83
100	4	440	11	5.79	12.76	4.5 – 7	65 – 102	0.330	0.0117	1	10	22
160	6	1000	11	8.83	19.47	4.5 – 7	65 – 102	1.050	0.0371	2	14	31

– continued next page –

Angle Valves

DN (nominal I. D.)		Conductance (molecular flow)	with pneumatic actuator, double acting						
			Compressed air m" – max. overpressure		Volume of pneumatic actuator		Closing time	Weight	
mm	inch	ls ⁻¹	bar	psi	l	ft ³		s	kg
100	4	440	4.5 – 7	65 – 102	0.330	0.0117	1	7.38	16.27
160	6	1000	4.5 – 7	65 – 102	0.380	0.0134	2	12.54	27.65

Inline Valves

DN (nominal I. D.)		Conductance (molecular flow)	with manual actuator			with pneumatic actuator, single acting with closing spring (NC)						
			Turns per stroke	Weight		Compressed air m" – max. overpressure		Volume of pneumatic actuator		Closing time	Weight	
mm	inch	ls ⁻¹		n	kg	lbs	bar	psi	l		ft ³	s
16	5/8	5	3.6	0.28	0.62	4 – 8	58 – 116	0.004	0.0001	0.10	0.50	1.10
25	1	14	3.8	0.42	0.93	4 – 8	58 – 116	0.011	0.0004	0.20	0.60	1.32
40	1 1/2	45	4.5	1	2.20	4 – 8	58 – 116	0.035	0.0012	0.55	1.40	3.09
50	2	80	4.8	1.61	3.55	4 – 8	58 – 116	0.047	0.0017	0.65	2.60	5.73
80	3	200	6.6	3	6.61	4 – 8	58 – 116	0.112	0.0040	0.70	3.75	8.27

5 HV Angle/Inline Valve, Series 26.4/26.5

Ordering Information

Valve with Manual Actuator

Removable Handwheel

PART #	SIZE (in)	SIZE (mm)	FLANGE ENDS
VAT26424-KA01	5/8	16	QF16
VAT26428-KA01	1	25	QF25
VAT26432-KA01	1 1/2	40	QF40
VAT26434-KA01	2	50	QF50
VAT26436-QA01	2 1/2	63	LF63
VAT26438-QA01	3	80	LF80
VAT26440-QA01	4	100	LF100
VAT26444-QA01	6	160	LF160



Valve with Pneumatic Actuator

Single Acting with Closing Spring (NC)

Without Solenoid Valve

With Position Indicator

PART #	SIZE (in)	SIZE (mm)	FLANGE ENDS
VAT26424-KA21	5/8	16	QF16
VAT26428-KA21	1	25	QF25
VAT26432-KA21	1 1/2	40	QF40
VAT26434-KA21	2	50	QF50
VAT26436-QA21	2 1/2	63	LF63
VAT26438-QA21	3	80	LF80
VAT26440-QA21	4	100	LF100
VAT26444-QA21	6	160	LF160



ORDERING NOTE: 120V AC & 24V DC Solenoids are available upon request.

Valve with Pneumatic Actuator

Double-Acting

Without Solenoid Valve

With Position Indicator

PART #	SIZE (in)	SIZE (mm)	FLANGE ENDS
VAT26440-QA24	4	100	LF100
VAT26444-QA24	6	160	LF160



5 HV Angle/Inline Valve, Series 26.4/26.5

Service Kits for HV Angle Valve, Series 26.4

PART #	DESCRIPTION
VAT242324	Service Kit for 5/8 " HV Angle Valves, Series 26.4
VAT241077	Service Kit for 1 " HV Angle Valves, Series 26.4
VAT241079	Service Kit for 1 1/2 " HV Angle Valves, Series 26.4
VAT245556	Service Kit for 2 " HV Angle Valves, Series 26.4
VAT250695	Service Kit for 2 1/2 " HV Angle Valves, Series 26.4
VAT250697	Service Kit for 3 " HV Angle Valves, Series 26.4
VAT577551	Service Kit for 4 " HV Angle Valves, Series 26.4
VAT577547	Service Kit for 6 " HV Angle Valves, Series 26.4

Ordering Information

HV In-Line Valve, Series 26.5

Valve with Manual Actuator

Removable Handwheel

PART #	SIZE (in)	SIZE (mm)	FLANGE ENDS
VAT26524-KA01	5/8	16	QF16
VAT26528-KA01	1	25	QF25
VAT26532-KA01	1 1/2	40	QF40
VAT26534-KA01	2	50	QF50
VAT26538-QA01	3	80	LF80

Valve with Pneumatic Actuator

Single Acting with Closing Spring (NC)

Without Solenoid Valve

With Position Indicator

PART #	SIZE (in)	SIZE (mm)	FLANGE ENDS
VAT26524-KA21	5/8	16	QF16
VAT26528-KA21	1	25	QF25
VAT26532-KA21	1 1/2	40	QF40
VAT26534-KA21	2	50	QF50
VAT26538-QA21	3	80	LF80

ORDERING NOTE: 120V AC & 24V DC Solenoids are available upon request.

Service Kits for HV Inline Valve, Series 26.5

PART #	DESCRIPTION
VAT242324	Service Kit for 5/8" HV Inline Valves, Series 26.5
VAT241077	Service Kit for 1" HV Inline Valves, Series 26.5
VAT241079	Service Kit for 1 1/2" HV Inline Valves, Series 26.5
VAT245556	Service Kit for 2" HV Inline Valves, Series 26.5
VAT250697	Service Kit for 2 1/2" HV Inline Valves, Series 26.5

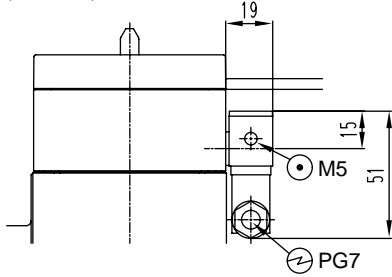


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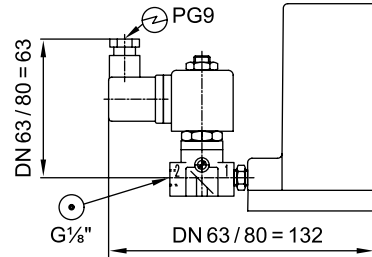
HV Angle/Inline Valve, Series 26.4/26.5

Solenoid Valves

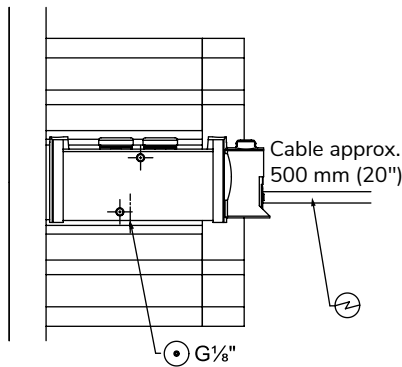
Solenoid valve
DN 10 – 50 (3/8" – 2")



Solenoid valve
DN 63 – 80 (2 1/2" – 3")



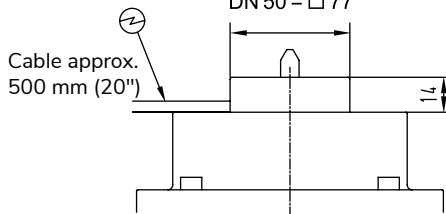
Solenoid valve
DN 100 – 160 (4" – 6")



Position Indicator

Position indicator
DN 10 – 160 (3/8" – 6")

- DN 10 / 16 = □ 40
- DN 25 / 63 / 80 / 100 / 160 = □ 48
- DN 40 / 200 / 250 = □ 65
- DN 50 = □ 77

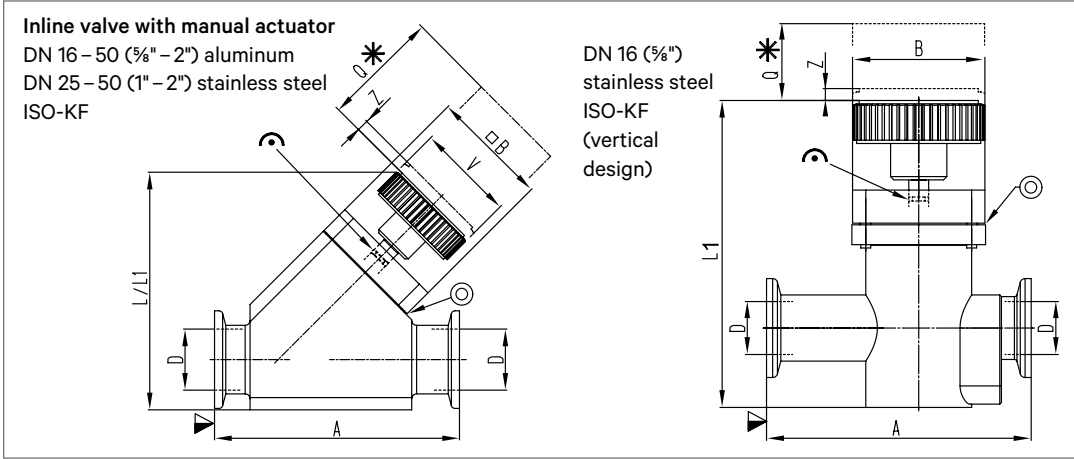
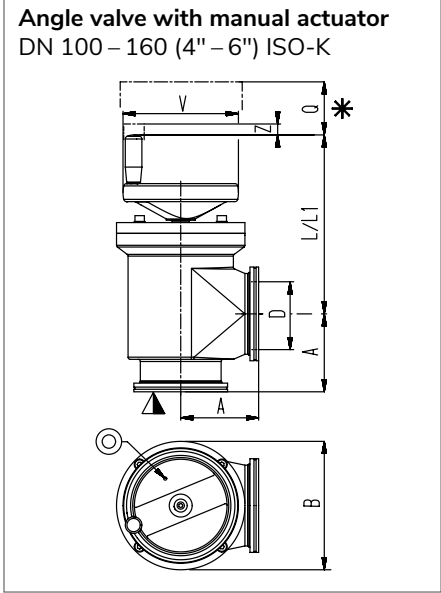
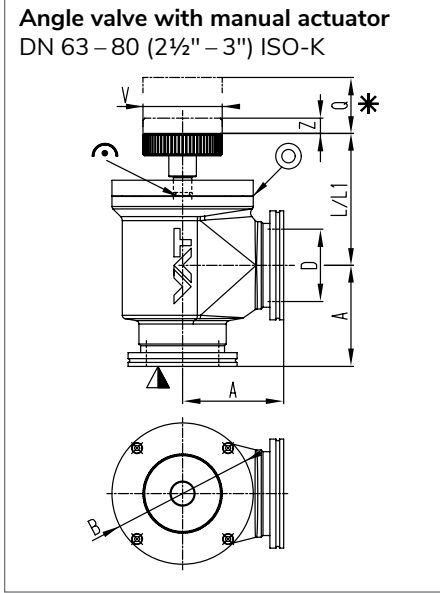
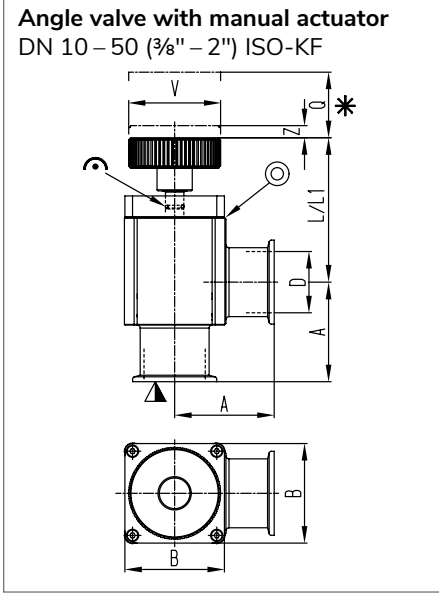


One closing contact each for the open and closed valve positions.

- ⊙ Compressed air connection
- ⊕ Electrical connection

5 HV Angle/Inline Valve, Series 26.4/26.5

Dimensions



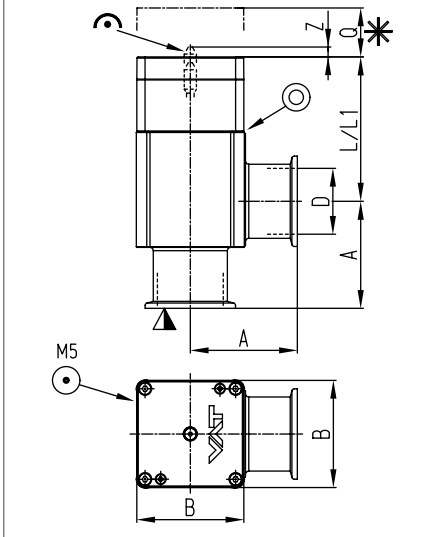
- ▽ Valve seat side
 - * Required for dismantling
 - ⊕ Mechanical position indication
 - ⊙ Leak detection hole
- L = aluminum
L1 = stainless steel

¹⁾ Gate stroke longer due to transmission

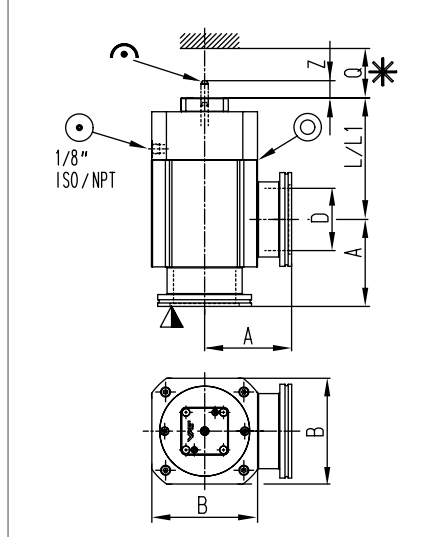
DN	Angle valves									Inline valves					
	mm inch	10 3/8	16 5/8	25 1	40 1 1/2	50 2	63 2 1/2	80 3	100 4	160 6	16 5/8	25 1	40 1 1/2	50 2	80 3
A	mm inch	30 1.18	40 1.57	50 1.97	65 2.56	70 2.76	88 3.46	90 3.54	108 4.25	138 5.43	80 3.15	100 3.94	130 5.12	178 7.01	on request
B	mm inch	40 1.57	40 1.57	48 1.89	65 2.56	77 3.03	123 4.84	123 4.84	154 6.06	215 8.46	40 1.57	48 1.89	65 2.56	77 3.03	
D	mm inch	12 0.47	16 0.63	25 0.98	40 1.57	50 1.97	63 2.48	80 3.15	100 3.94	153 6.02	16 0.63	25 0.98	40 1.57	50 1.97	
L	mm inch	-	64.90 2.56	60.90 2.40	94.30 3.71	101.10 3.98	112 4.41	111.70 4.40	225.10 8.86	240.50 9.47	90.60 3.57	97 3.82	143.50 5.65	167.20 6.58	
L1	mm inch	67.40 2.65	67.40 2.65	64.30 2.53	97.30 3.83	104.10 4.10	111.70 4.40	-	215.60 8.49	244.70 9.63	92.80 3.65	105.80 4.17	152.50 6	175.10 6.89	
Q	mm inch	46 1.81	46 1.81	44 1.73	73.50 2.89	85.50 3.37	105 4.13	105 4.13	170 6.69	195 7.68	46 1.81	44 1.73	73.50 2.89	85.50 3.37	
V	mm inch	40 1.57	40 1.57	40 1.57	60 2.36	60 2.36	60 2.36	60 2.36	100 3.94	160 6.30	40 1.57	40 1.57	60 2.36	60 2.36	
Z ¹⁾	mm inch	3.60 0.14	3.60 0.14	4.70 0.19	7.90 0.31	9.30 0.37	13.30 0.52	13.30 0.52	22 0.87	27.20 1.07	3.60 0.14	4.70 0.19	7.90 0.31	9.30 0.37	

Dimensions

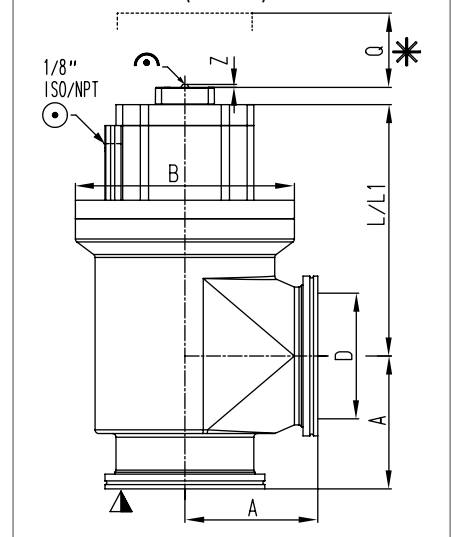
Angle valve with pneumatic actuator, single acting with closing spring (NC)
DN 10 – 50 (3/8" – 2") ISO-KF



Angle valve with pneumatic actuator, single acting with closing spring (NC)
DN 63 (2 1/2") ISO-K



Angle valve with pneumatic actuator, single acting with closing spring (NC)
DN 80 – 160 (3" – 6") ISO-K
double acting
DN 100 – 160 (4" – 6") ISO-K



L = aluminum
L1 = stainless steel

	DN	10		16		25		40		50		63		80		100		160			
		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch		
	A	mm	inch	30	1.18	40	1.57	50	1.97	65	2.56	70	2.76	88	3.46	90	3.54	108	4.25	138	5.43
	B	mm	inch	40	1.57	40	1.57	48	1.89	65	2.56	77	3.03	107.60	4.24	123	4.84	178	7.01	220	8.66
	D	mm	inch	12	0.47	16	0.63	25	0.98	40	1.57	50	1.97	63	2.48	80	3.15	102	4.02	153	6.02
	Z	mm	inch	2	0.08	2	0.08	4	0.16	9.50	0.37	10.50	0.41	31.40	1.24	31.40	1.24	2.40	0.09	2.40	0.09
with closing spring	L	mm	inch	-	-	65.20	2.57	60.60	2.39	87.70	3.45	96	3.78	123	4.84	109	4.29	218.30	8.59	221.50	8.72
	L1	mm	inch	67.70	2.67	67.70	2.67	64	2.52	90.70	3.57	99	3.90	118.40	4.66	-	-	211.70	8.33	228	8.98
double acting	L	mm	inch	-	-	-	-	-	-	-	-	-	-	-	-	-	218.10	8.59	218.50	8.60	
	L1	mm	inch	-	-	-	-	-	-	-	-	-	-	-	-	-	211.50	8.33	225	8.86	
Q	mm	inch	46	1.81	46	1.81	44	1.73	73.50	2.89	85.50	3.37	105	4.13	115.60	4.55	170	6.69	200	7.87	
	Z	mm	inch	2	0.08	2	0.08	4	0.16	9.50	0.37	10.50	0.41	31.40	1.24	31.40	1.24	2.40	0.09	2.40	0.09

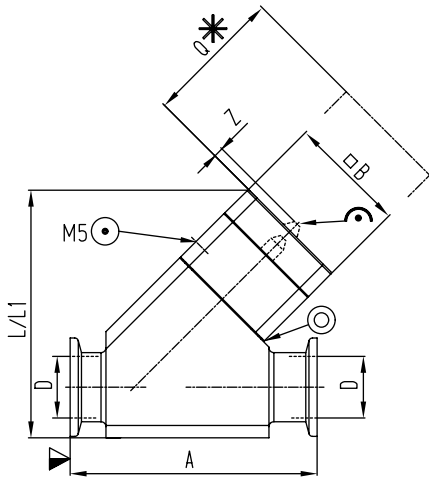
- ▼ Valve seat side
- * Required for dismantling
- ⊙ Compressed air connection
- ⌢ Mechanical position indication
- ⊙ Leak detection hole

HV Angle/Inline Valve, Series 26.4/26.5

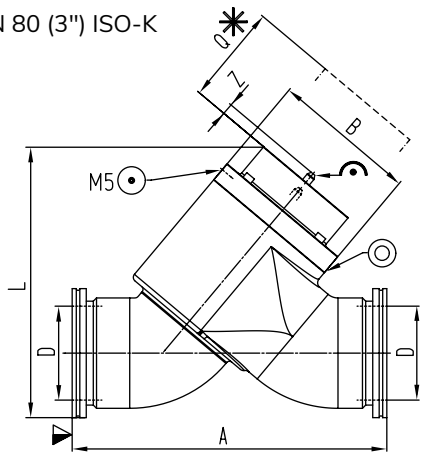
5

Dimensions

Inline valve with pneumatic actuator,
single acting with closing spring (NC)
DN 16 – 50 (5/8" – 2") ISO-KF



DN 80 (3") ISO-K



L = aluminum
L1 = stainless steel

	DN	mm	16	25	40	50	80
	inch		5/8	1	1 1/2	2	3
	A	mm	80	100	130	178	268
	inch		3.15	3.94	5.12	7.01	10.55
	B	mm	40	48	65	77	123
	inch		1.57	1.89	2.56	3.03	4.84
	D	mm	16	25	40	50	80
	inch		0.63	0.98	1.57	1.97	3.15
with closing spring	L	mm	91.50	100.30	140.90	170.10	230.50
	inch		3.60	3.95	5.55	6.70	9.07
	L1	mm	93	108.90	149.90	171.80	-
	inch		3.66	4.29	5.90	6.76	-
	Q	mm	46	44	73.50	85.50	150
	inch		1.81	1.73	2.89	3.37	5.91
	Z	mm	2	4	9.50	10.50	31.40
	inch		0.08	0.16	0.37	0.41	1.24

- ▼ Valve seat side
- * Required for dismantling
- ⊙ Compressed air connection
- ⊕ Mechanical position indication
- ⊖ Control electronics connection
- ⊗ Leak detection hole

ANCORP

Empowering Science and Technology Since 1965

www.ancorp.com

VAT
PASSION. PRECISION. PURITY.

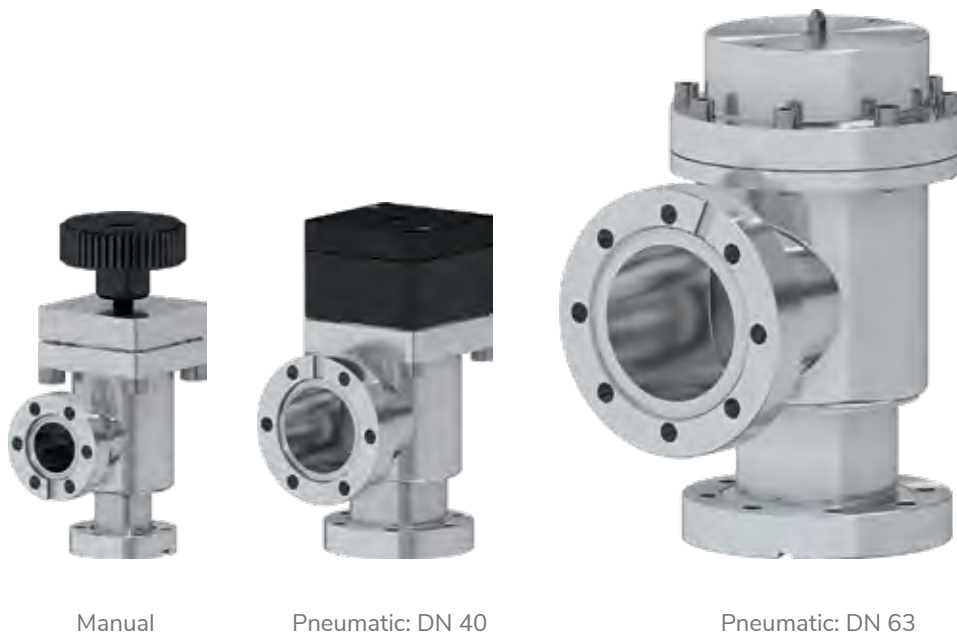
RELIABLE UNDER ALL CONDITIONS.



Process stability requires reliable components - under all conditions. Don't compromise the reliability of your processes - benefit from the renowned performance of VAT vacuum valve solutions. Now available through **ANCORP**.

ANCORP is proud to announce that we are now an official distributor of a wide range of VAT vacuum valves. Order your next VAT valve from **ANCORP** today at sales@ancorp.com or call us at 1-800-352-6431 (**1-800-FLANGE1**)

For pumping and venting of UHV systems when an extremely low outgassing rate is important.



Extremely low outgassing rate

Resistant against high differential pressure

Stationary rotatable CF flange

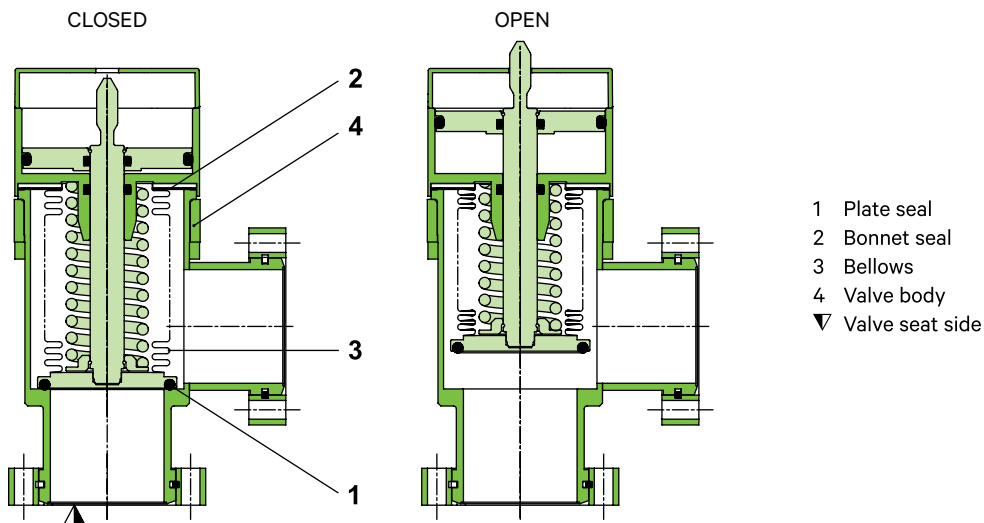
5

UHV Angle Valve, Series 28.4

Main Features

Sizes	DN 16 – 63 mm (5/8" – 2½")
Actuators	manual: with removable handwheel pneumatic: single acting with closing spring (NC)
Body material	stainless steel
Feedthrough	bellows
Standard flanges	CF-R

Functional Principle



Technical Data

Leak rate	Valve body Valve seat	$< 5 \cdot 10^{-10}$ mbar ls ⁻¹ $< 1 \cdot 10^{-9}$ mbar ls ⁻¹
Pressure range		5 · 10 ⁻¹⁰ mbar to 5 bar (abs)
Differential pressure on the plate	In opening direction In closing direction	≤ 2 bar ≤ 5 bar
Differential pressure at opening		≤ 1 bar
Cycles until first service		3 million
Temperature ¹⁾	Valve body Manual actuator Pneumatic actuator Solenoid valve & position indicator	≤ 150 °C ≤ 120 °C ≤ 150 °C ≤ 80 °C
Material	Valve body DN 16, 40 DN 63 Plate Bellows	AISI 304 (1.4301) AISI 316L (1.4404, 1.4435) AISI 316L (1.4404, 1.4435) AISI 316L (1.4404, 1.4435)
Seal	Bonnet Plate	metal FKM (Viton®)
Feedthrough		bellows
Mounting position		any
Solenoid valve		24 V DC (others on request)
Position indicator: contact rating	Voltage Current	5 – 50 V AC / DC 5 – 100 mA
Valve position indication		visual (mechanical)

¹⁾ Maximum values: depending on operating conditions and sealing materials.

			with manual actuator				with pneumatic actuator, single acting with closing spring (NC)						
DN (nominal I.D.)		CF-R flange	Conductance (molecular flow)	Turns per stroke	Weight		Compressed air m ³ – max. overpressure		Volume of pneumatic actuator		Closing time	Weight	
mm	inch		ls ⁻¹	n	kg	lbs	bar	psi	l	ft ³	s	kg	lbs
16	5/8	1 1/3	5	3.6	0.30	0.70	4 – 8	58 – 116	0.004	0.0001	0.10	0.40	0.90
40	1 1/2	2 3/4	45	4.5	1.50	3.30	4 – 8	58 – 116	0.035	0.0012	0.55	1.60	3.50
63	2 1/2	4 1/2	160	6.6	5.30	11.70	4 – 8	58 – 116	0.112	0.0040	0.70	6.00	13.20

UHV Angle Valve, Series 28.4

Ordering Information

Valve with Manual Actuator

Removable Handwheel

REFERENCE ID	SIZE (in)	SIZE (mm)	FLANGE ENDS
VAT28424-GE01	5/8	16	CF133
VAT28432-GE01	1 1/2	40	CF275
VAT28436-GE01	2 1/2	63	CF450



Valve with Pneumatic Actuator

Single acting with closing spring (NC)

Without Solenoid Valve

With Position Indicator

REFERENCE ID	SIZE (in)	SIZE (mm)	FLANGE ENDS
VAT28424-GE21	5/8	16	CF133
VAT28432-GE21	1 1/2	40	CF275
VAT28436-GE21	2 1/2	63	CF450



5

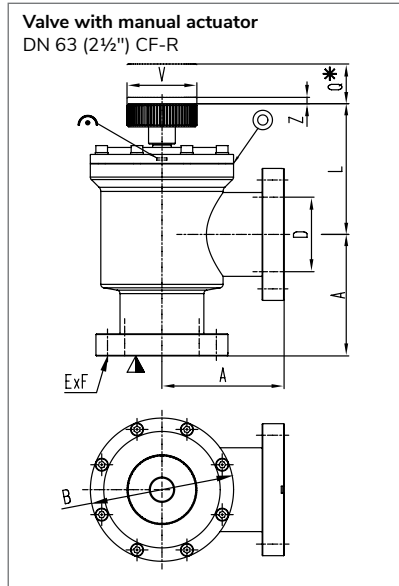
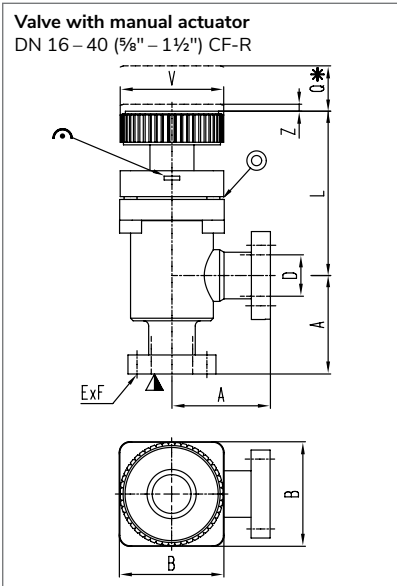
UHV Angle Valve, Series 28.4

ORDERING NOTE: 120V AC & 24V DC Solenoids are available upon request.

Service Kits for UHV Angle Valve, Series 28.4

PART #	DESCRIPTION
VAT313005	Service Kit for 5/8" UHV Angle Valves, Series 28.4
VAT313007	Service Kit for 1 1/2" UHV Angle Valves, Series 28.4
VAT313009	Service Kit for 1 1/2" UHV Angle Valves, Series 28.4

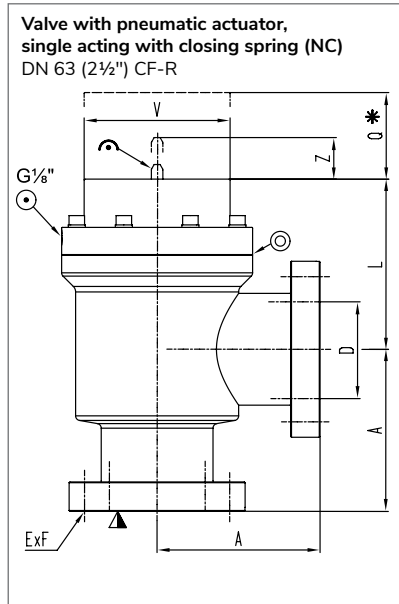
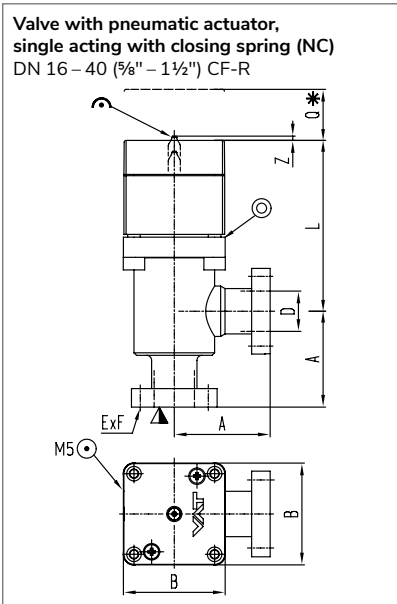
Dimensions



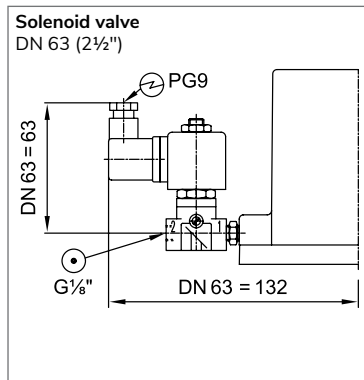
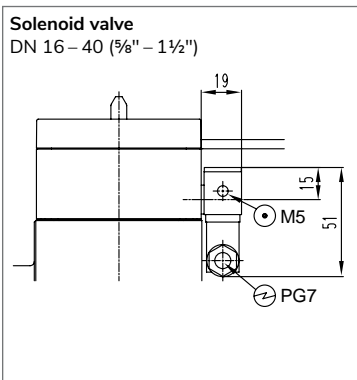
DN	mm	16	40	63
	inch	5/8	1 1/2	2 1/2
A	mm	38	63	105
	inch	1.50	2.48	4.13
B	mm	40	65	123
	inch	1.57	2.56	4.84
D	mm	16	40	64
	inch	0.63	1.57	2.52
E x F		6 x 4.30 6 x 0.17	6 x 6.60 6 x 0.26	8 x 8.40 8 x 0.33
L	mm	67.30	97.40	111.70
	inch	2.65	3.83	4.40
Q	mm	45	73.50	105
	inch	1.77	2.89	4.13
V	mm	40	60	60
	inch	1.57	2.36	2.36
Z	mm	3.60	7.90	13.40
	inch	0.14	0.31	0.53

DN	mm	16	40	63
	inch	5/8	1 1/2	2 1/2
A	mm	38	63	105
	inch	1.50	2.48	4.13
B	mm	40	65	-
	inch	1.57	2.56	-
D	mm	16	40	64
	inch	0.63	1.57	2.52
E x F		6 x 4.30 6 x 0.17	6 x 6.60 6 x 0.26	8 x 8.40 8 x 0.33
L	mm	67.80	90.80	109.60
	inch	2.67	3.57	4.31
Q	mm	45	71	105
	inch	1.77	2.80	4.13
V	mm	-	-	94
	inch	-	-	3.70
Z	mm	2	9.50	31.40
	inch	0.08	0.37	1.24

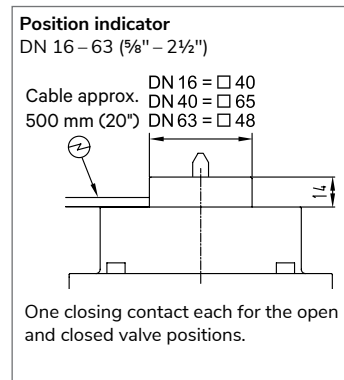
- ▼ Valve seat side
- * Required for dismantling
- ⊙ Compressed air connection
- ⌚ Mechanical position indication
- ⊙ Leak detection hole



Solenoid Valves



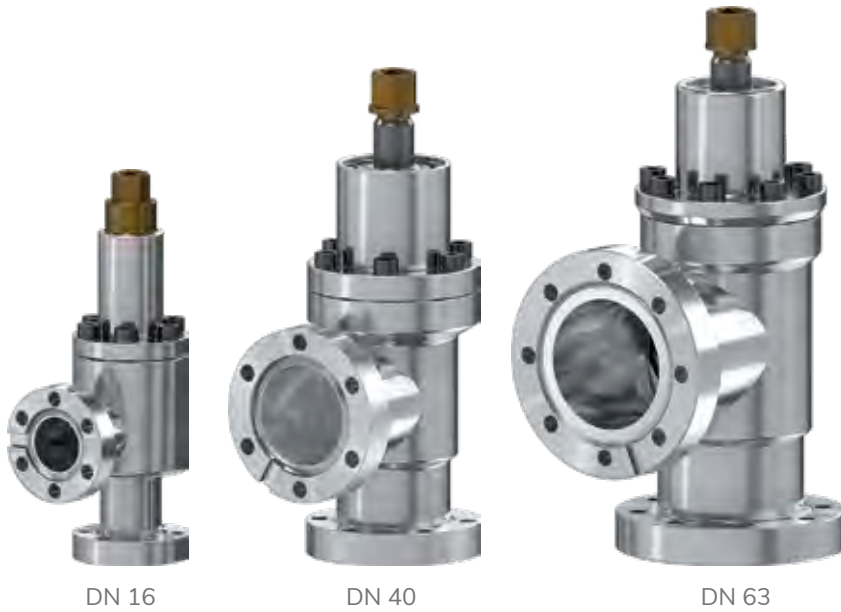
Position Indicator



- ⊙ Compressed air connection
- ⊙ Electrical connection

5 HV Angle Valve, Series 28.4

For vacuum processes with extreme UHV requirements.



Sealing surfaces are only elastically deformed

Convenient operation with a standard hexagon wrench – no torque wrench required

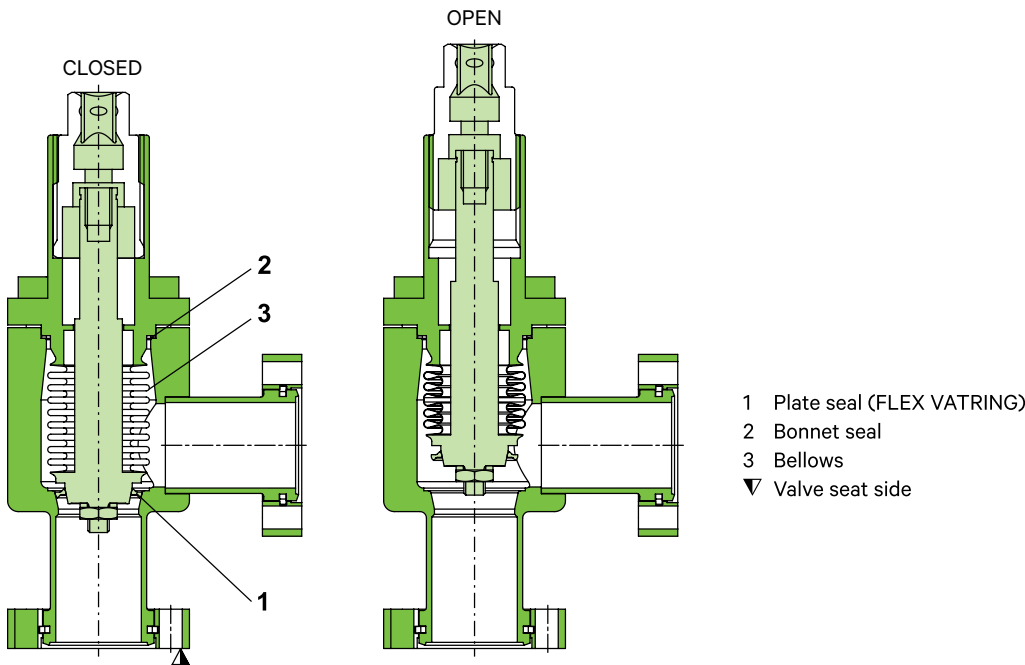
High conductance

FLEX VATRING exchangeable twice

Main Features

Sizes	DN 16 – 63 mm (5/8" – 2½")
Actuator	manual: hexagon head
Body material	stainless steel
Standard flanges	CF-R
Sealing technology	FLEX VATRING

Functional Principle



Technical Data

Leak rate	Valve body, valve seat	$< 1 \cdot 10^{-10}$ mbar ls ⁻¹
Pressure range		XHV to 2 bar (abs)
Differential pressure on the plate		≤ 2 bar
Differential pressure at opening		≤ 1 bar ¹⁾
Lifetime		≥ 1 000 cycles
Bake-out temperature ²⁾	In open and closed position	≤ 300 °C
Heating and cooling rate		≤ 60 °C h ⁻¹
Material	Valve body, mechanism, bellows	AISI 316L (1.4404, 1.4435)
Seal	Bonnet, plate	metal
Feedthrough		bellows
Mounting position		any
Valve position indication		visual (mechanical)
Conductance (molecular flow)	DN 16	5 ls ⁻¹
	DN 40	50 ls ⁻¹
	DN 63	105 ls ⁻¹
Closing force		closes at a mechanical stop
Weight	DN 16	0.4 kg / 0.9 lbs
	DN 40	1.9 kg / 4.2 lbs
	DN 63	5.9 kg / 13 lbs

¹⁾ > 1 bar with reduced number of cycles.

²⁾ Maximum values: depending on operating conditions and sealing materials.

Ordering Information

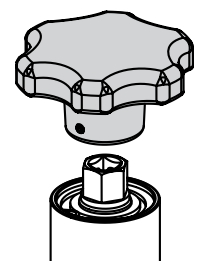
Easy Close All-Metal Angle Valve, Series 54.1

PART #	SIZE (in)	SIZE (mm)	FLANGE ENDS
VAT54124-GE02	5/8	16	CF133
VAT54132-GE02	1 1/2	40	CF275
VAT54136-GE02	2 1/2	63	CF450



Handwheel

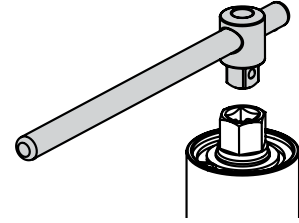
PART #	DESCRIPTION
VAT240039	Handwheel for 5/8" All-Metal Angle Valve, Series 54.1
VAT531966	Handwheel for 1 1/2" All-Metal Angle Valve, Series 54.1



5 Easy Close Angle Valve, Series 54.1

T-Bar Tool

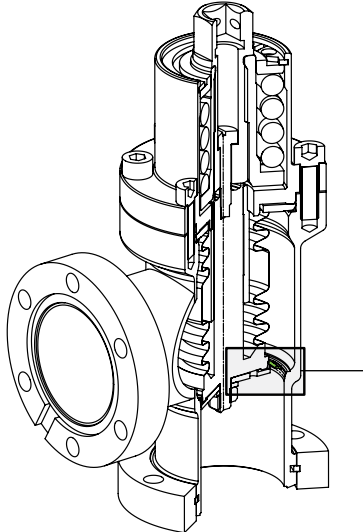
PART #	DESCRIPTION
VAT312699	T-Bar Tool for 5/8" All-Metal Angle Valve, Series 54.1
VAT530026	T-Bar Tool for 1 1/2" All-Metal Angle Valve, Series 54.1
VAT312731	T-Bar Tool for 2 1/2" All-Metal Angle Valve, Series 54.1



Service Kit for All-Metal Angle Valve, Series 54.1

The service kits allow you to exchange the FLEX VATRING without remachining the sealing surface on the valve seat. The FLEX VATRING may be replaced up to two times. The service kit 1 is for the first, the service kit 2 is for the second exchange.

PART #	DESCRIPTION
VAT529581	Service Kit 1 for 5/8" All-Metal Angle Valve, Series 54.1
VAT529582	Service Kit 2 for 5/8" All-Metal Angle Valve, Series 54.1
VAT530022	Service Kit 1 for 1 1/2" All-Metal Angle Valve, Series 54.1
VAT530023	Service Kit 2 for 1 1/2" All-Metal Angle Valve, Series 54.1
VAT530024	Service Kit 1 for 2 1/2" All-Metal Angle Valve, Series 54.1
VAT530025	Service Kit 2 for 2 1/2" All-Metal Angle Valve, Series 54.1

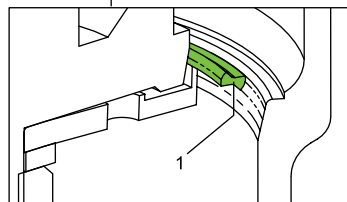


Easy replacement of FLEX VATRING

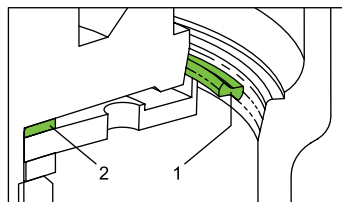
In case of a seat seal leak caused by environmental influences, the FLEX VATRING seal can be replaced twice without the need for re-machining the valve seat.

Three seal rings of different diameters enable leak tight sealing on three different levels of pre-prepared sealing surface provided in the valve body. If there is damage on one level, the replacement seal ring of a different diameter will seal at the next level.

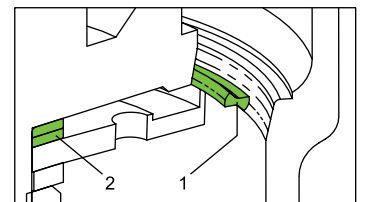
ANCORP offers a range of service kits, and the seal exchange can easily be carried out by the user.



Initial sealing system (maximum diameter of FLEX VATRING seal)

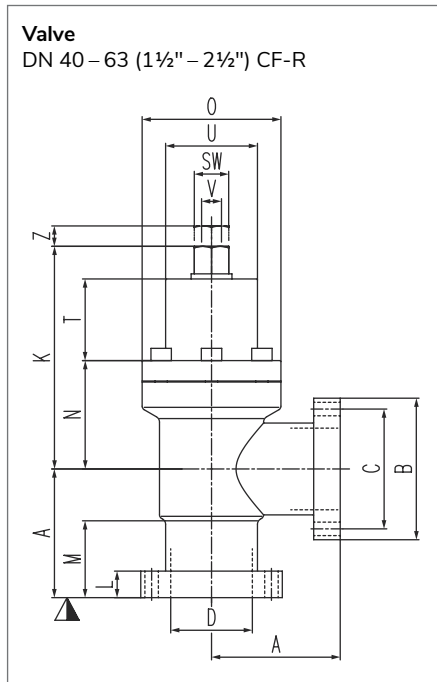
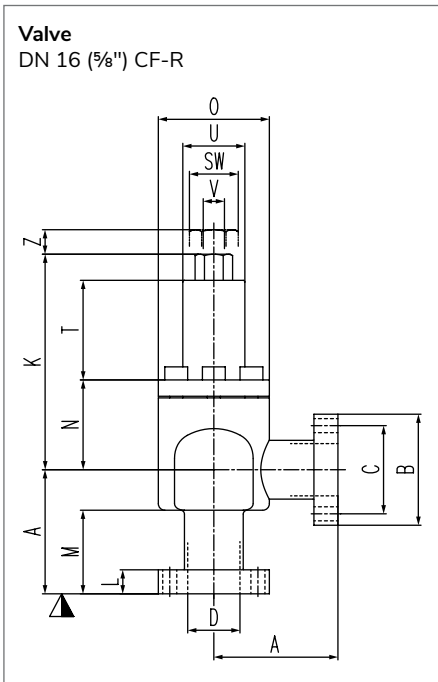


Sealing system after installation of the first service kit (medium diameter of FLEX VATRING seal)



Sealing system after installation of the second service kit (minimum diameter of FLEX VATRING seal)

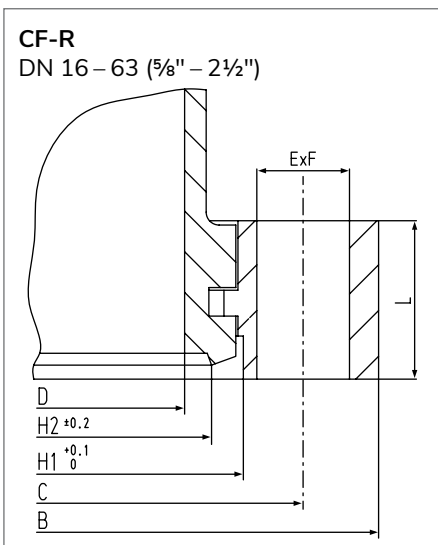
Main Dimensions



DN	mm	16	40	63
	inch	5/8	1 1/2	2 1/2
A	mm	38	63	105
	inch	1.50	2.48	4.13
B	mm	34	69.35	113.35
	inch	1.34	2.73	4.46
C	mm	27	58.70	92.10
	inch	1.06	2.31	3.63
D	mm	16	40	64
	inch	0.63	1.57	2.52
K	mm	66	109.10	141.50
	inch	2.60	4.30	5.57
L	mm	7.35	13	18.90
	inch	0.29	0.51	0.74
M	mm	25.60	37.60	56.60
	inch	1.01	1.48	2.23
N	mm	27.50	53.10	74
	inch	1.08	2.09	2.91
O	mm	34	68	94
	inch	1.34	2.68	3.70
SW	mm	10	17	22
	inch	0.39	0.67	0.87
T	mm	30.50	40	51.50
	inch	1.20	1.57	2.03
U	mm	19	45	54
	inch	0.75	1.77	2.13
V	mm	6.35	9.53	12.70
	inch	0.25	0.38	0.50
Z	mm	8.50	20	20
	inch	0.33	0.79	0.79

▼ Valve seat side

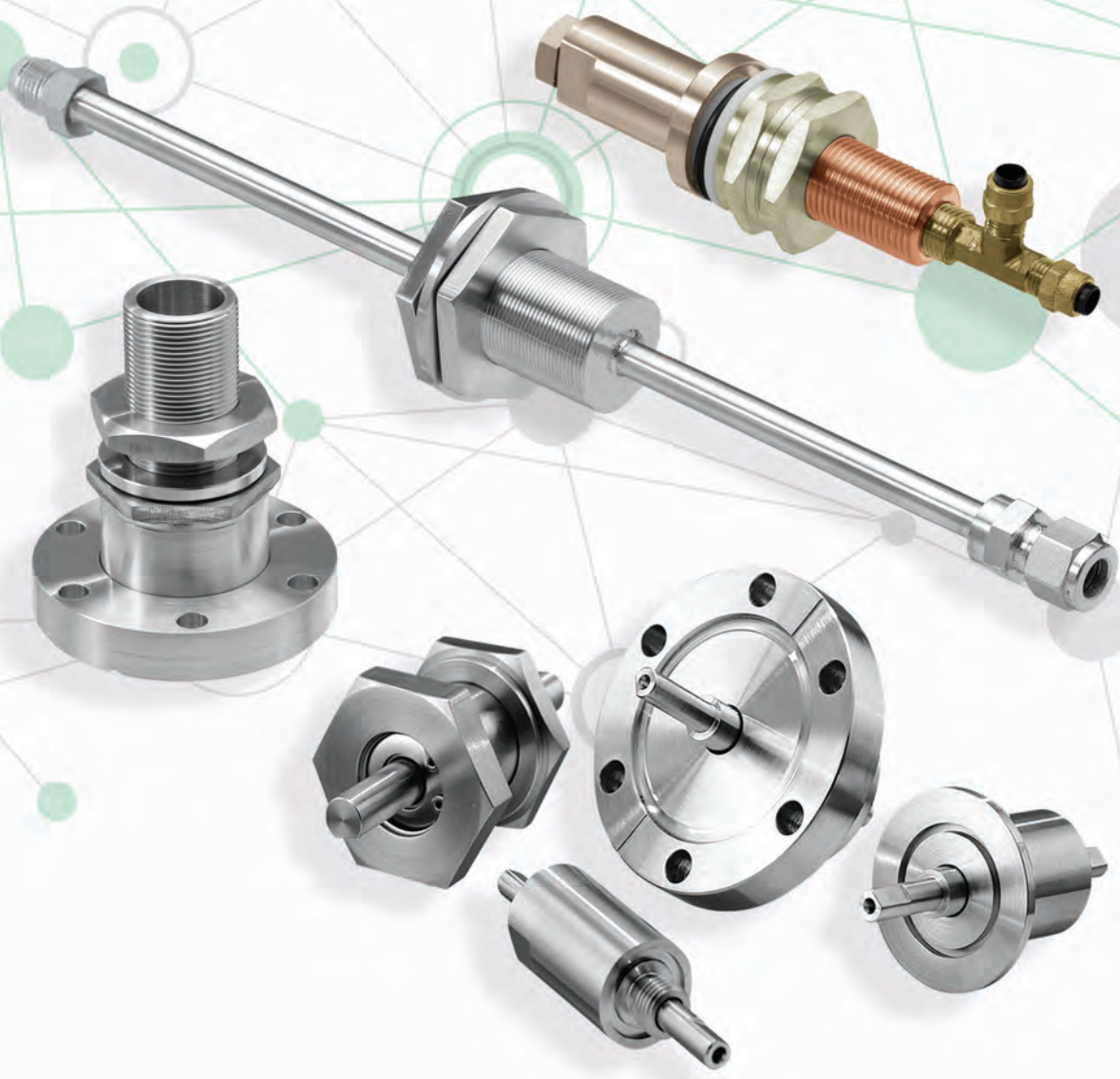
Flange Dimensions



DN	mm	16	40	63
	inch	5/8	1 1/2	2 1/2
B	mm	34	69.35	113.35
	inch	1.34	2.73	4.46
C	mm	27	58.70	92.10
	inch	1.06	2.31	3.63
D	mm	16	40	64
	inch	0.63	1.57	2.52
E x F	mm	6 x 4.30	6 x 6.60	8 x 8.40
	inch	6 x 0.17	6 x 0.26	8 x 0.33
H1	mm	21.40	48.30	82.50
	inch	0.84	1.90	3.25
H2	mm	18.50	42	77.40
	inch	0.73	1.65	3.05
L	mm	7.35	13	18.90
	inch	0.29	0.51	0.74

5 Easy Close Angle Valve, Series 54.1

Vacuum Feedthroughs



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Vacuum FEEDTHROUGHS



This section is made up of a wide variety of products that allow you to transfer fluid, gas, electricity or motion into your system without compromising hermetic integrity.

6 Vacuum Feedthroughs

Overview

The **ANCORP** electrical feedthrough line is used to transfer low voltage (50 volts max.), high current electrical power into a vacuum atmosphere. Our feedthrough features one-piece construction, eliminating any possible leakage through weld joints.

Rotary motion feedthroughs are available in two designs. Elastomer sealed rotary feedthroughs and ferro-sealed rotary feedthroughs. The elastomer sealed feedthrough utilizes a double O-ring seal. The ferro-sealed rotary feedthrough uses ferrofluid o-ring technology to provide a reliable vacuum seal, high RPM and high torque capacity all at a price unmatched for its

features. Ferro-sealed rotary feedthroughs are available in multiple flange connection designs.

Fluid and gas feedthroughs transmit fluids, cryogenic cooling agents or gasses into high and ultrahigh vacuum chambers. These feedthroughs are available with multiple tubing and flange connection options.

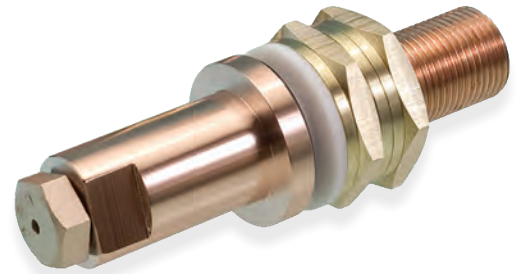
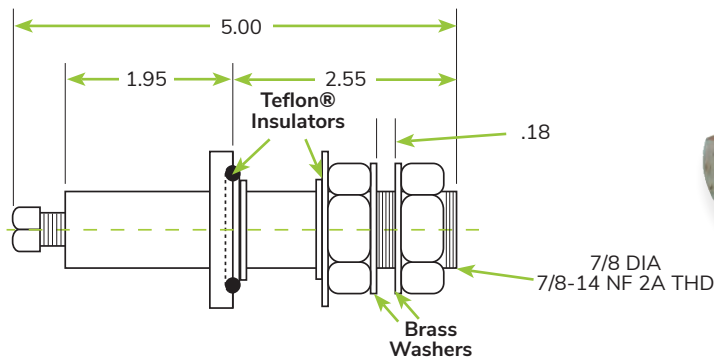
General feedthroughs serve many useful purposes. Attach a vacuum measurement device, add a gas backfill line, mount metal or glass tubing, connect your bulkhead port to an ISO-QF or CF flange or close an unused bulkhead port with a plug feedthrough.

Electrical Feedthroughs

This feedthrough is used to transfer low voltage (50 volts, max.), high current electrical power into a vacuum atmosphere. Our feedthrough features one-piece construction eliminating any possible leakage through welded joints.

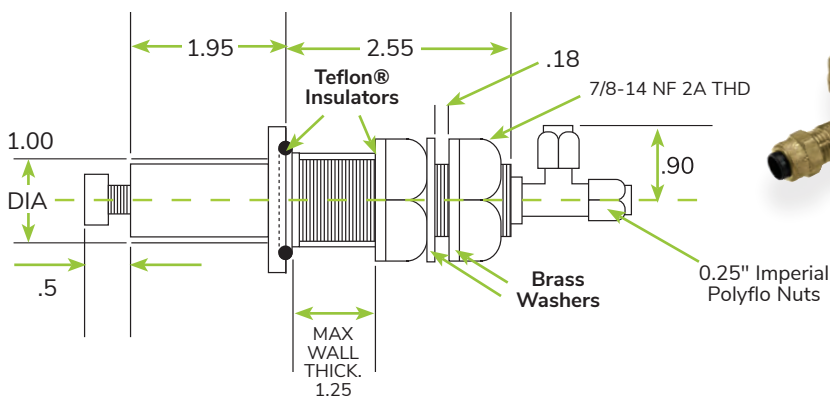
This unit is constructed of oxygen-free copper and brass. Insulators are Teflon® for strength and durability. Water line connectors are designed to accept 1/4 inch I.D. poly-flow tubing. This unit will mount into a standard 1 inch diameter hole.

400 AMP. Hi-Current Feedthrough



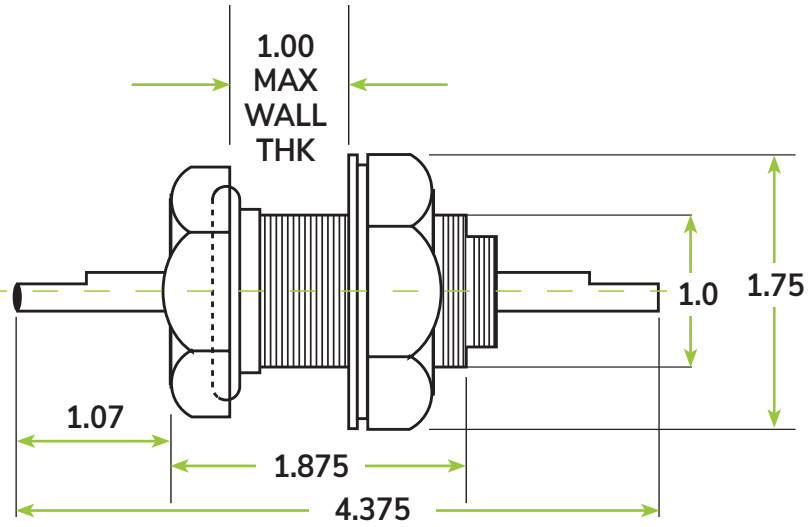
PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
2100002	FTHC-BH-400	400 Amp, High Current Feedthrough	\$235.00
2110005	FTV-RK	Repair Kit, contains large & small Teflon® insulator, O-ring	\$22.00

1000 AMP. Hi-Current Watercooled Feedthrough



PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
2100001	FTHC-BH-1000	1000 Amp, High Current, Water-Cooled Feedthrough	\$265.00
2110005	FTV-RK	Repair Kit, contains large & small Teflon® insulator, O-ring	\$22.00
2110008	FTV-T	Replacement Imperial Tee	\$28.00

Rotary Motion Feedthroughs - Elastomer Sealed



ANCORP's elastomer sealed rotary feedthrough is ideal for users requiring a rotary feedthrough for manual operation. The 1/4 inch shaft is supported by two ball bearings for smooth rotation. The 3/8 inch and 1/2 inch feedthroughs utilize bronze bearings to support the shaft. The shaft is sealed by a preloaded O-ring virtually foolproof! No spring to wear out or worry about.

This feedthrough is available in aluminum or stainless

steel. The unit is designed to fit standard 1 inch diameter through-hole mounting for wall thickness up to 1 1/4 inches.

The most amazing feature, however, is that the Viton® O-ring may be regreased or serviced by removing and replacing all components from the atmosphere side of the feedthrough in about 10 seconds without the use of any tools!

6 Rotary Motion Feedthroughs

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
2002010	FTRE-125-BH-A	0.25 in. Shaft (Aluminum) Rotary Motion Feedthrough with Elastomer Seal	\$210.00
2002011	FTRE-125-BH-S	0.25 in. Shaft (304 Stainless Steel) Rotary Motion Feedthrough with Elastomer Seal	\$380.00
2002012	FTRE-138-BH-A	0.38in. Shaft (Aluminum) Rotary Motion Feedthrough with Elastomer Seal	\$255.00
2002013	FTRE-138-BH-S	0.38 in. Shaft (304 Stainless Steel) Rotary Motion Feedthrough with Elastomer Seal	\$435.00
2002014	FTRE-150-BH-A	0.50 in. Shaft (Aluminum) Rotary Motion Feedthrough with Elastomer Seal	\$255.00
2002015	FTRE-150-BH-S	0.50 in. Shaft (304 Stainless Steel) Rotary Motion Feedthrough with Elastomer Seal	\$435.00

Spare Parts

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
2002009	125-BK	Replacement Parts: Replacement Bearings & O-rings	\$28.00
0605410	1-14 THIN NUT BRASS	1-14 in. Brass Hex Nut 35/34 in. Thick	CALL
0605414	1-FLATWASHER-BRASS	1 in. I.D. Washer Brass	CALL
0605408	1-14 THIN NUT SS 18-8	1-14 in. 18-8SS Hex Nut 35/64 in. Thick	CALL
0605412	1-FLATWASHER-SS	1 in. I.D. Washer 18-8 SS	\$3.00
2012015	125-KC	Replacement Parts: Knurled Cap	CALL

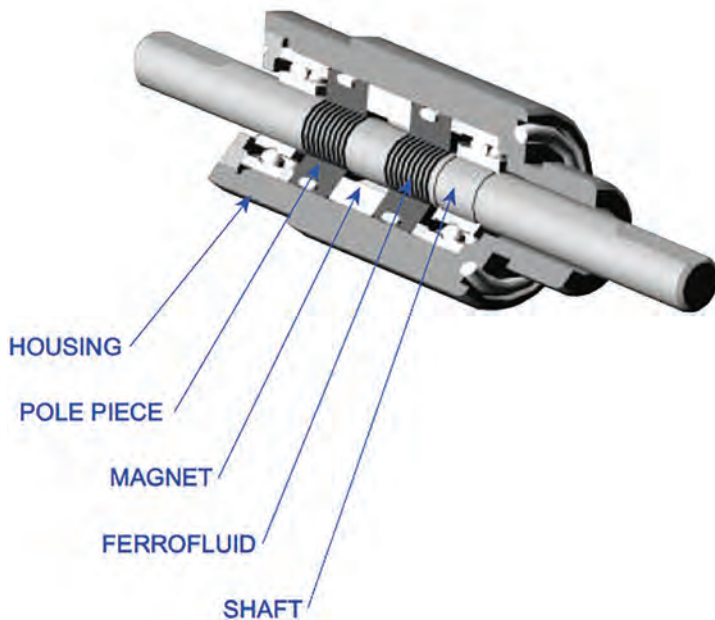
Ferro-Sealed Feedthrough

Ferrofluid Sealing Technology

Ferrofluid seals are based on the formation of liquid O-rings which create a hermetic seal on the shaft of the feedthrough. This is accomplished by the retention of magnetic fluid (ferrofluid) by powerful magnetic fields created by precise placement of high-strength magnets within the body of the feedthrough. The precise roller bearing spindle design allows for a smooth rotation and a high number of rotations per minute.



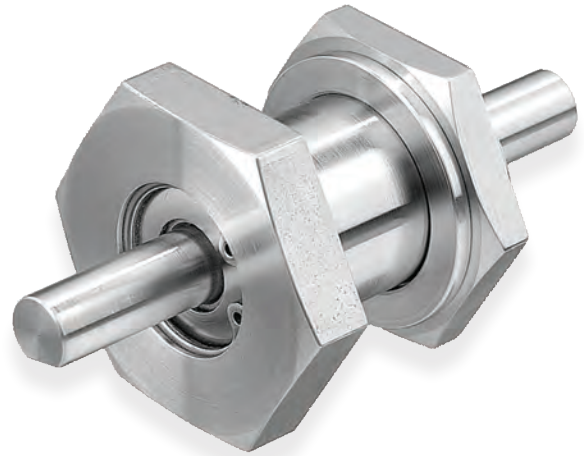
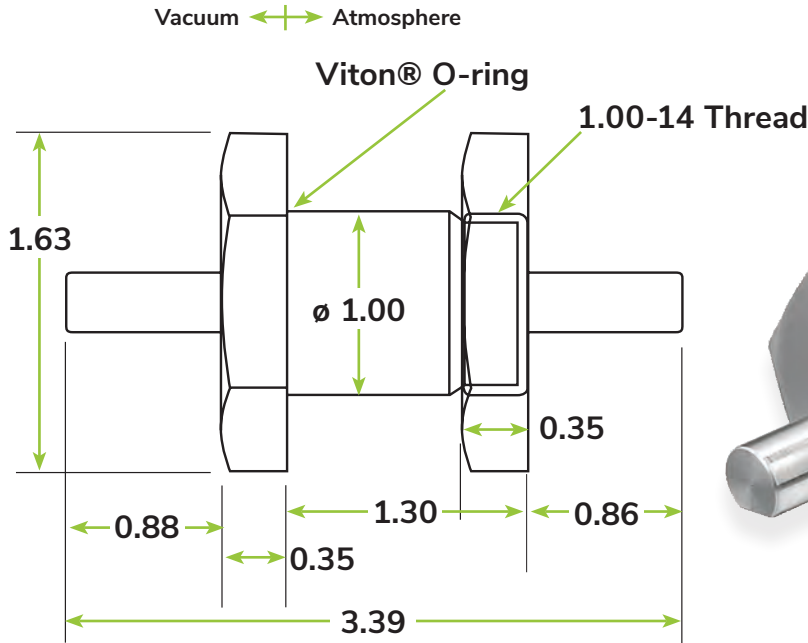
Ferrofluid forms liquid O-rings with the help of strong, high-energy magnets



- Hermetically sealed with ferrofluid technology
- Vacuum rated to 1×10^{-8} Torr (UHV option rated to 1×10^{-9} Torr)
- Up to 5000 RPM performance
- Very low stray magnetic fields
- No magnets in the vacuum environment
- High torque capacity
- 2 1/2 atmospheres of pressure differential tolerance
- Multiple connection options (threaded nose, baseplate, CF, ISO or customized)

Ferro-Sealed Rotary Motion - Baseplate Connection

1/4 in. & 3/8 in. Shaft Models



6

Ferro-Sealed Rotary Feedthroughs

Materials:

- Body and shaft – 17-4 PH stainless steel
- Seal – Viton®

Specifications:

- Vacuum rated: 1×10^{-8} Torr
- Max. operating pressure differential: 2.5 atm.
- Helium leak tested to 5×10^{-9} std. cc/sec.
- Max No-Load speed: 5000 rpm
- Max. temperature: 80°C
- Drag torque:
 - @ Break-away = 11 oz-in
 - @ 100 rpm = 6 oz-in
 - @ 1000 rpm = 9 oz-in
- Bearing type: R6
 - Max. static load = 305 lbs.
 - Max. dynamic load = 575 lbs.
 - Lubricant = Fomblin®/Krytox® Blend

Product Notes:

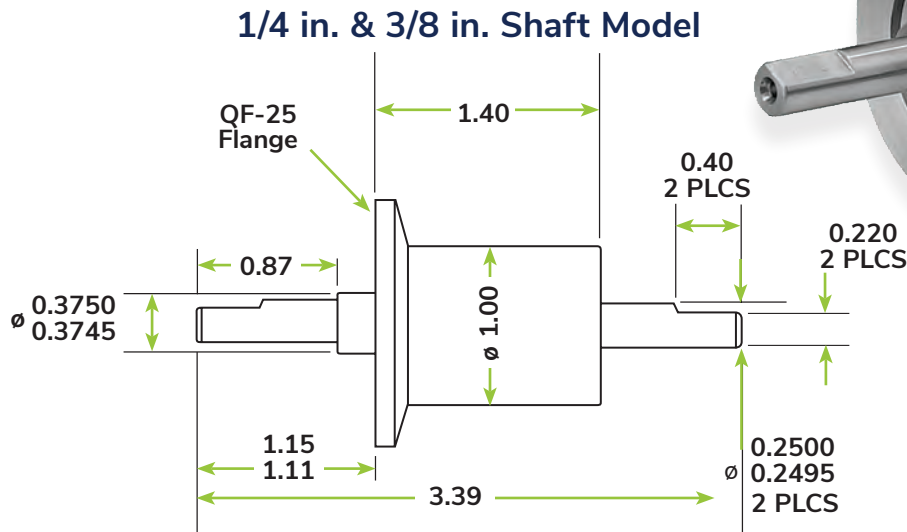
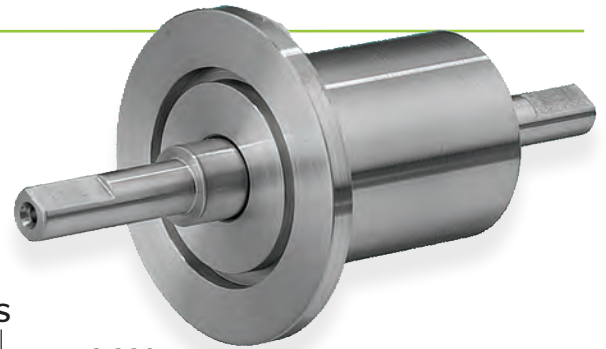
- Hermetically sealed with ferrofluid technology
- Very low stray magnetic fields
- No magnets in the vacuum environment
- High torque capacity
- Connection to system: Viton® O-ring seal with baseplate threaded fastener

Options: Call for price and availability

- UHV compatible design
- Custom shaft lengths
- Custom flange connection

PART #	REFERENCE ID	SHAFT DIAMETER	CONNECTION	MAX TRANSMISSION TORQUE	UNIT PRICE
2203009	BP100-025-FTRF-3.39-160	0.25 inch	0.75 in. or 1 in. Baseplate Ports	160 in-lbs.	\$480.00
2203010	BP100-038-FTRF-3.39-160	0.38 inch	0.75 in. or 1 in. Baseplate Ports	160 in-lbs.	\$480.00

Ferro-Sealed Rotary Motion - ISO-QF Connection



Materials:

- Body and shaft – 17-4 PH stainless steel
- Seal – Viton®

Specifications:

- Vacuum rated: 1×10^{-8} Torr
- Max. operating pressure differential: 2.5 atm.
- Helium leak tested to 5×10^{-9} std. cc/sec.
- Max No-Load speed: 5000 rpm
- Max. temperature: 80°C
- Drag torque:
 - @ Break-away = 11 oz-in
 - @ 100 rpm = 6 oz-in
 - @ 1000 rpm = 9 oz-in
- Bearing type: R6
 - Max. static load = 305 lbs.
 - Max. dynamic load = 575 lbs.
 - Lubricant = Fomblin®/Krytox® Blend

Product Notes:

- Hermetically sealed with ferrofluid technology
- Very low stray magnetic fields
- No magnets in the vacuum environment
- High torque capacity
- Connection to system: Viton® O-ring seal with baseplate threaded fastener

Options: Call for price and availability

- UHV compatible design
- Custom shaft lengths
- Custom flange connection

PART #	REFERENCE ID	SHAFT DIAMETER	CONNECTION	MAX TRANSMISSION TORQUE	UNIT PRICE
2203003	QF25-025-FTRF-3.39-160	0.25 inch	ISO-QF25 F	160 in-lbs.	\$480.00
2203004	QF25-038-FTRF-3.39-160	0.38 inch	ISO-QF25 F	160 in-lbs	\$480.00

Ferro-Sealed Rotary Motion - CF Connection



Materials:

- Body and shaft – 17-4 PH stainless steel
- Seal – Viton®

Specifications:

- Vacuum rated: 1×10^{-8} Torr (UHV option rated to 1×10^{-9} torr)
- Max. operating pressure differential: 2.5 atm.
- Helium leak tested to 5×10^{-9} std. cc/sec.
- Max No-Load speed: 5000 rpm
- Max. temperature: 80°C
- Drag torque:
 - @ Break-away = 11 oz-in
 - @ 100 rpm = 6 oz-in
 - @ 1000 rpm = 9 oz-in
- Bearing type: R6
 - Max. static load = 305 lbs.
 - Max. dynamic load = 575 lbs.
 - Lubricant = Fomblin®/Krytox® Blend

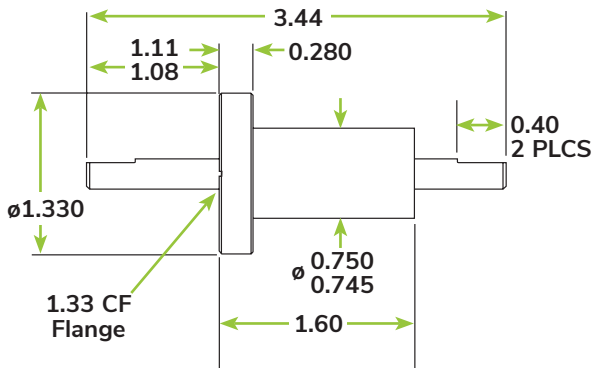
Product Notes:

- Hermetically sealed with ferrofluid technology
- Very low stray magnetic fields
- No magnets in the vacuum environment
- High torque capacity
- Connection to system: Viton® O-ring seal with baseplate threaded fastener

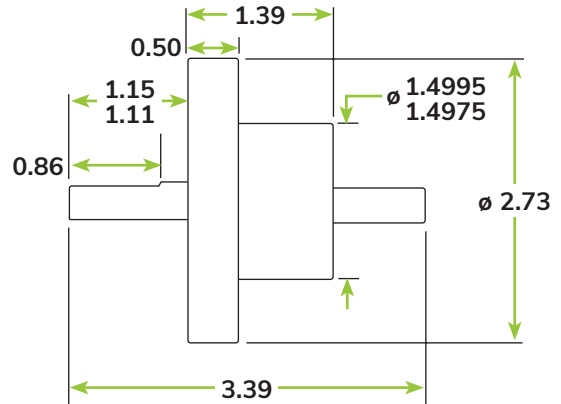
Options: Call for price and availability

- UHV compatible design
- Custom shaft lengths
- Custom flange connection

Drawing A



Drawing B



PART #	REFERENCE ID	DRAWING	SHAFT DIAMETER	CONNECTION	MAX TRANSMISSION TORQUE	UNIT PRICE
2203005	CF133-025-FTRF-3.44-160	A	0.25 inch	CF133 Flange	160 in-lbs.	\$540.00
2203006	CF275-025-FTRF-3.39-160	B	0.25 inch	CF275 Flange	160 in-lbs.	\$600.00
2203007	CF275-038-FTRF-3.39-160	B	0.38 inch	CF275 Flange	160 in-lbs.	\$600.00

Non-Cryogenic Fluid and Gas Single Feedthrough

Materials:

- Flanges and tubing: 304 stainless steel
- Fittings: 316 stainless steel

Max. Temperature:

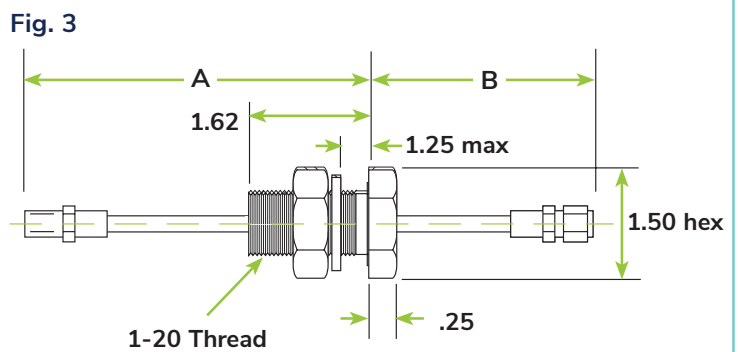
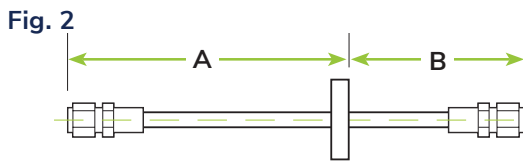
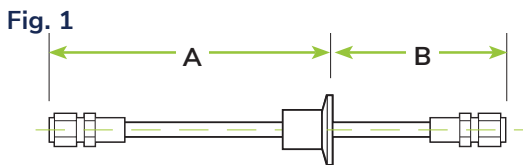
- CF flanged feedthrough: 450°C
- ISO-QF and baseplate feedthroughs: 150°C (200°C intermittent)

Vacuum Rating:

- CF flanged feedthroughs: UHV 1×10^{-13} Torr
- ISO-QF and baseplate feedthroughs: HV 1×10^{-8} Torr



Options: Call for price and delivery
• Custom designs are available.



PART #	REFERENCE ID	FLANGE	CONNECTION	DRAWING	A (in)	B (in)	UNIT PRICE
2001000	QF16XTE-025-FTST-6.00	QF16	0.25 in. Tube Ends	1	4.0	2.0	CALL
2001001	QF50XTE-025-FTST-6.00	QF50	0.25 in. Tube Ends	1	4.0	2.0	CALL
2001003	BP100XTE-025-FTST-7.00	1 in. Baseplate	0.25 in. Tube Ends	3	4.5	2.5	CALL
2001004	CF133XTE-025-FTST-6.00	CF133	0.25 in. Tube Ends	2	4.0	2.0	CALL
2001005	QF25XTE-025-FTST-6.00	QF25	0.25 in. Tube Ends	1	4.0	2.0	CALL
2001006	QF40XTE-025-FTST-6.00	QF40	0.25 in. Tube Ends	1	4.0	2.0	CALL
2001008	CF275XTE-025-FTST-6.00	CF275	0.25 in. Tube Ends	2	4.0	2.0	CALL
2001015	QF16XSWG25-FTST-8.00	QF16	0.25 in. Swagelok®	1	5.0	3.0	CALL
2001016	QF25XSWG25-FTST-8.00	QF25	0.25 in. Swagelok®	1	5.0	3.0	\$150.00
2001017	QF40XSWG25-FTST-8.00	QF40	0.25 in. Swagelok®	1	5.0	3.0	\$156.00
2001019	QF50XSWG25-FTST-8.00	QF50	0.25 in. Swagelok®	1	5.0	3.0	\$165.00
2001021	BP100XSWG25-FTST-9.00	1 in. Baseplate	0.25 in. Swagelok®	3	5.5	3.5	CALL
2001022	CF133XSWG25-FTST-8.00	CF133	0.25 in. Swagelok®	2	5.0	3.0	CALL
2001023	CF275XSWG25-FTST-8.00	CF275	0.25 in. Swagelok®	2	5.0	3.0	CALL
2001030	QF16XMVCR25-FTST-8.00	QF16	0.25 in. Male VCR®	1	5.0	3.0	CALL
2001031	QF25XMVCR25-FTST-8.00	QF25	0.25 in. Male VCR®	1	5.0	3.0	CALL
2001032	QF40XMVCR25-FTST-8.00	QF40	0.25 in. Male VCR®	1	5.0	3.0	CALL
2001034	QF50XMVCR25-FTST-8.00	QF50	0.25 in. Male VCR®	1	5.0	3.0	CALL
2001036	BP100XMVCR25-FTST-9.00	1 in. Baseplate	0.25 in. Male VCR®	3	5.5	3.5	CALL
2001037	CF133XMVCR25-FTST-8.00	CF133	0.25 in. Male VCR®	2	5.0	3.0	CALL
2001038	CF275XMVCR25-FTST-8.00	CF275	0.25 in. Male VCR®	2	5.0	3.0	CALL

Non-Cryogenic Fluid and Gas Double Feedthrough

Materials:

- Flanges and tubing: 304 stainless steel
- Fittings: 316 stainless steel

Max. Temperature:

- CF flanged feedthrough: 450°C
- ISO-QF and baseplate feedthroughs: 150°C (200°C intermittent)

Vacuum Rating:

- CF flanged feedthroughs: UHV 1×10^{-13} Torr
- ISO-QF and baseplate feedthroughs: HV 1×10^{-8} Torr



Options: Call for price and delivery
 • Custom designs are available.

Fig. 4

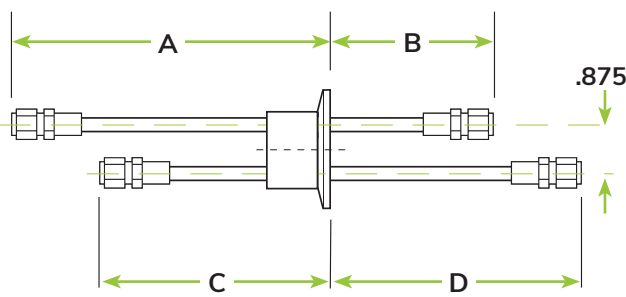
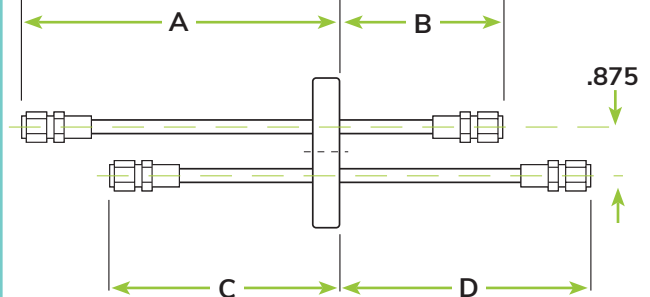


Fig. 5



PART #	REFERENCE ID	FLANGE	CONNECTION	DRAWING	A (in)	B (in)	C (in)	D (in)	UNIT PRICE
2001002	QF50XTE-025-FTDT-6.00	QF50	0.25 in. Tube	4	4.0	2.0	2.0	4.0	CALL
2001009	CF275XTE-025-FTDT-6.00	CF275	0.25 in. Tube	5	4.0	2.0	2.0	4.0	CALL
2001011	QF40XTE-025-FTDT-6.00	QF40	0.25 in. Tube	4	4.0	2.0	2.0	4.0	CALL
2001018	QF40XSWG25-FTDT-8.00	QF40	0.25 in. Swagelok®	4	5.0	3.0	3.0	5.0	CALL
2001020	QF50XSWG25-FTDT-8.00	QF50	0.25 in. Swagelok®	4	5.0	3.0	3.0	5.0	CALL
2001024	CF275XSWG25-FTDT-8.00	CF275	0.25 in. Swagelok®	5	5.0	3.0	3.0	5.0	CALL
2001033	QF40XMVCR25-FTDT-8.00	QF40	0.25 in. Male VCR®	4	5.0	3.0	3.0	5.0	CALL
2001035	QF50XMVCR25-FTDT-8.00	QF50	0.25 in. Male VCR®	4	5.0	3.0	3.0	5.0	CALL
2001039	CF275XMVCR25-FTDT-8.00	CF275	0.25 in. Male VCR®	5	5.0	3.0	3.0	5.0	CALL

Cryogenic Fluid Single Feedthroughs

Materials:

- Fittings: 316 stainless steel
- Flanges and tubing: 304 stainless steel

Max. Temperature:

- CF flanged feedthrough: 450°C
- ISO-QF and baseplate feedthroughs: 150°C (200°C intermittent)

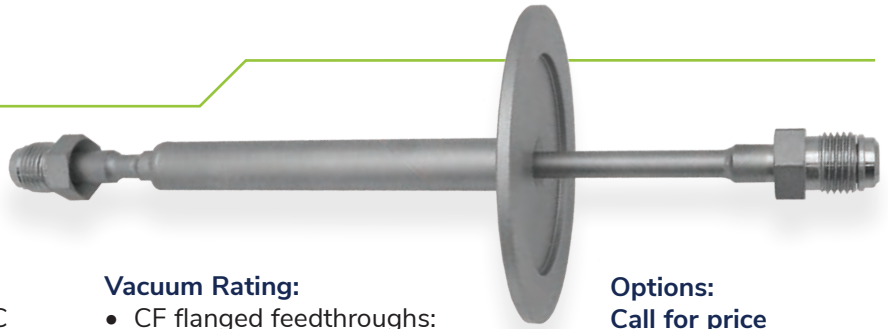
Vacuum Rating:

- CF flanged feedthroughs: UHV 1×10^{-13} Torr
- ISO-QF and baseplate feedthroughs: HV 1×10^{-8} Torr

Options:

Call for price and delivery

- Custom designs are available.



6

Cryogenic Fluid Feedthroughs

Fig. 1

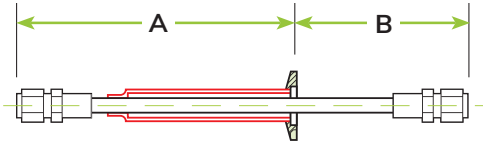


Fig. 2

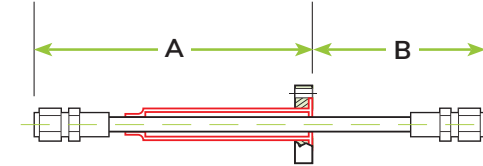
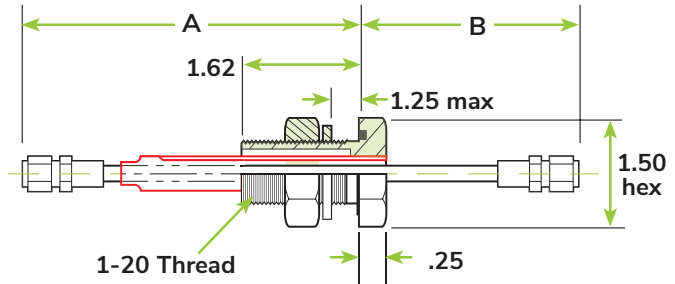


Fig. 3



* red details illustrate shield

PART #	REFERENCE ID	FLANGE	CONNECTION	FIGURE	A (in)	B (in)	UNIT PRICE
2001040	QF16XTE-025-FTCS-7.00	QF16	0.25 in. Tube Ends	1	5.0	2.0	CALL
2001041	QF25XTE-025-FTCS-7.00	QF25	0.25 in. Tube Ends	1	5.0	2.0	CALL
2001042	QF40XTE-025-FTCS-7.00	QF40	0.25 in. Tube Ends	1	5.0	2.0	CALL
2001044	QF50XTE-025-FTCS-7.00	QF50	0.25 in. Tube Ends	1	5.0	2.0	CALL
2001046	BP100XTE-025-FTCS-7.00	1 in. Baseplate	0.25 in. Tube Ends	3	4.5	2.5	CALL
2001047	CF133XTE-025-FTCS-7.00	CF133	0.25 in. Tube Ends	2	5.0	2.0	CALL
2001048	CF275XTE-025-FTCS-7.00	CF275	0.25 in. Tube Ends	2	5.0	2.0	CALL
2001050	QF16XSWG25-FTCS-9.00	QF16	0.25 in. Swagelok®	1	6.0	3.0	CALL
2001051	QF25XSWG25-FTCS-9.00	QF25	0.25 in. Swagelok®	1	6.0	3.0	CALL
2001052	QF40XSWG25-FTCS-9.00	QF40	0.25 in. Swagelok®	1	6.0	3.0	CALL
2001054	QF50XSWG25-FTCS-9.00	QF50	0.25 in. Swagelok®	1	6.0	3.0	CALL
2001056	BP100XSWG25-FTCS-9.00	1 in. Baseplate	0.25 in. Swagelok®	3	5.5	3.5	CALL
2001057	CF133XSWG25-FTCS-9.00	CF133	0.25 in. Swagelok®	2	6.0	3.0	CALL
2001058	CF275XSWG25-FTCS-9.00	CF275	0.25 in. Swagelok®	2	6.0	3.0	CALL
2001065	QF16XMVCR25-FTCS-9.00	QF16	0.25 in. Male VCR®	1	6.0	3.0	CALL
2001066	QF25XMVCR25-FTCS-9.00	QF25	0.25 in. Male VCR®	1	6.0	3.0	CALL
2001067	QF40XMVCR25-FTCS-9.00	QF40	0.25 in. Male VCR®	1	6.0	3.0	CALL
2001069	QF50XMVCR25-FTCS-9.00	QF50	0.25 in. Male VCR®	1	6.0	3.0	CALL
2001071	BP100XMVCR25-FTCS-9.00	1 in. Baseplate	0.25 in. Male VCR®	3	5.5	3.5	CALL
2001072	CF133XMVCR25-FTCS-9.00	CF133	0.25 in. Male VCR®	2	6.0	3.0	CALL
2001073	CF275XMVCR25-FTCS-9.00	CF275	0.25 in. Male VCR®	2	6.0	3.0	CALL

Cryogenic Fluid Double Feedthroughs

Materials:

- Flanges and tubing: 304 stainless steel
- Fittings: 316 stainless steel

Max. Temperature:

- CF flanged feedthrough: 450°C
- ISO-QF and baseplate feedthroughs: 150°C (200°C intermittent)

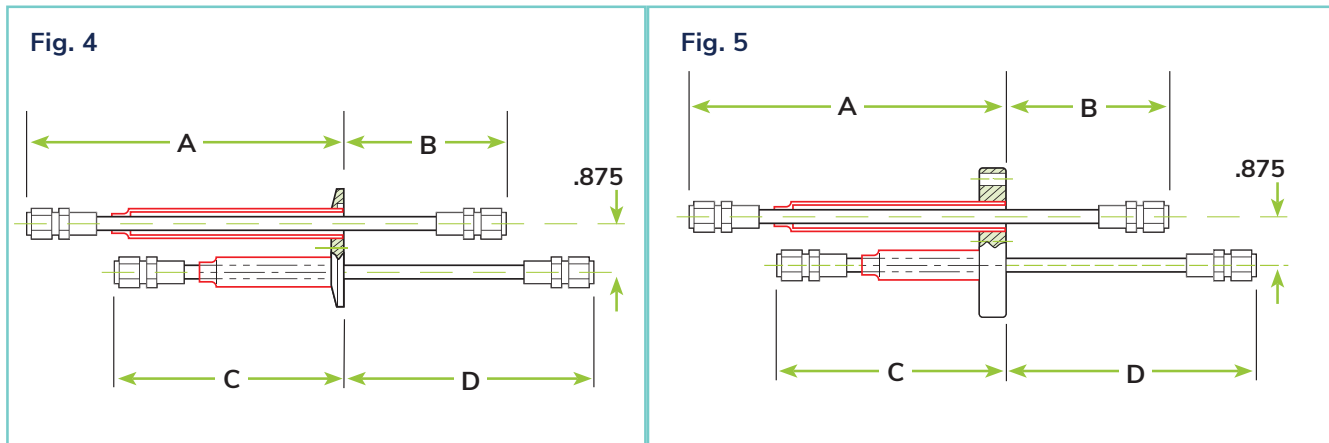


Vacuum Rating:

- CF flanged feedthroughs: UHV 1×10^{-13} Torr
- ISO-QF and baseplate feedthroughs: HV 1×10^{-8} Torr

Options: Call for price and delivery

- Custom designs are available.



Cryogenic Fluid Double Feedthrough

PART #	REFERENCE ID	FLANGE	CONNECTION	FIGURE	A (in)	B (in)	C (in)	D (in)	UNIT PRICE
2001043	QF40XTE-025-FTCD-7.00	QF40	0.25 in. Tube Ends	4	5.0	2.0	3.0	4.0	CALL
2001045	QF50XTE-025-FTCD-7.00	QF50	0.25 in. Tube Ends	4	5.0	2.0	3.0	4.0	CALL
2001049	CF275XTE-025-FTCD-7.00	CF275	0.25 in. Tube Ends	5	5.0	2.0	3.0	4.0	CALL
2001053	QF40XSWG25-FTCD-9.00	QF40	0.25 in. Swagelok®	4	6.0	3.0	4.0	5.0	CALL
2001055	QF50XSWG25-FTCD-9.00	QF50	0.25 in. Swagelok®	4	6.0	3.0	4.0	5.0	CALL
2001059	CF275XSWG25-FTCD-9.00	CF275	0.25 in. Swagelok®	5	6.0	3.0	4.0	5.0	CALL
2001068	QF40XMVCR25-FTCD-9.00	QF40	0.25 in. Male VCR®	4	6.0	3.0	4.0	5.0	CALL
2001070	QF50XMVCR25-FTCD-9.00	QF50	0.25 in. Male VCR®	4	6.0	3.0	4.0	5.0	CALL
2001074	CF275XMVCR25-FTCD-9.00	CF275	0.25 in. Male VCR®	5	6.0	3.0	4.0	5.0	CALL

Baseplate to CF Flange Transition Feedthrough

Materials:

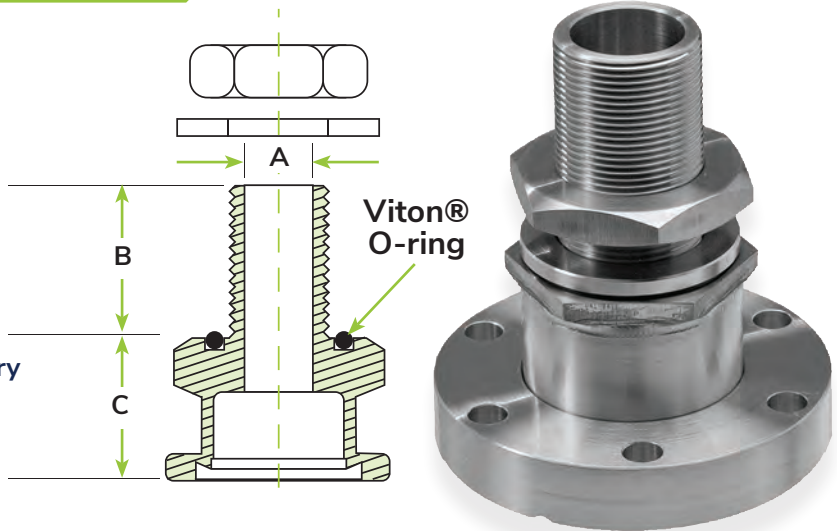
- 304 stainless steel

Product Notes:

- Adapts from baseplate fitting to CF flange
- Baseplate fitting designed to fit 1 inch diameter ports on baseplates up to 1 inch thick

Options: Call for price and delivery

- Additional sizes



PART #	REFERENCE ID	A (in)	B (in)	C (in)	UNIT PRICE
2000065	CF212XBP100-075-2.90	0.75	1.62	1.28	\$205.00
2000066	CF275XBP100-075-2.90	0.75	1.62	1.28	\$220.00

Baseplate to ISO-QF Flange Transition Feedthrough

Materials:

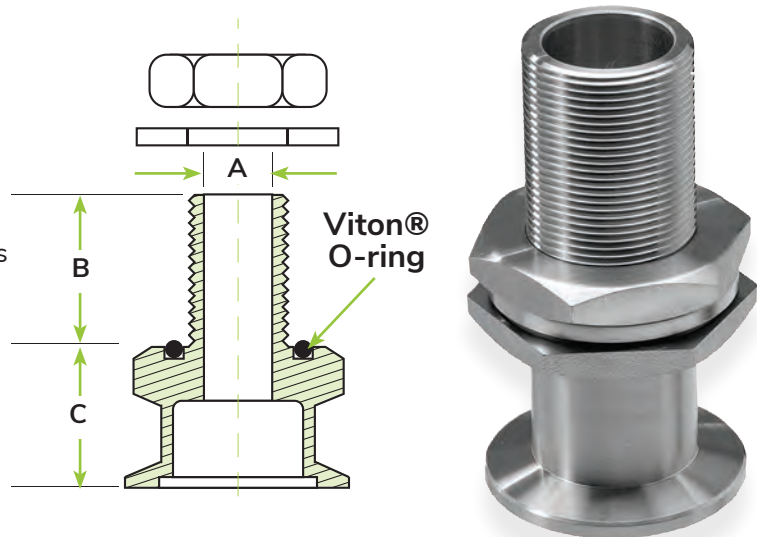
- 304 stainless steel

Product Notes:

- Adapts from baseplate fitting to ISO-QF flange
- Baseplate fitting designed to fit 1 inch diameter ports on baseplates up to 1 inch thick

Options: Call for price and delivery

- Additional sizes



PART #	REFERENCE ID	A (in)	B (in)	C (in)	UNIT PRICE
2000060	QF25XBP100-075-2.90	0.75	1.620	1.28	\$180.00
2000061	QF40XBP100-075-2.90	0.75	1.620	1.28	\$195.00

Baseplate to Female NPT Transition Feedthrough

Materials:

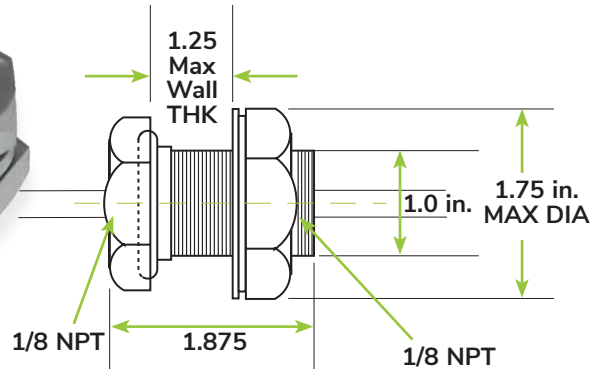
- 304 stainless steel
- Aluminum

Options: Call for price and delivery

- Additional sizes

Product Notes:

- Adapts from baseplate fitting to NPT fitting
- Baseplate fitting designed to fit 1 inch diameter ports on baseplates up to 1 inch thick



PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
2000005	BP100XFNPT12-1.875-AL	Aluminum Baseplate Fitting to 0.13 inch Female NPT	\$135.00
2000006	BP100XFNPT12-1.875	Stainless Steel Baseplate Fitting to 0.13 inch Female NPT	\$160.00

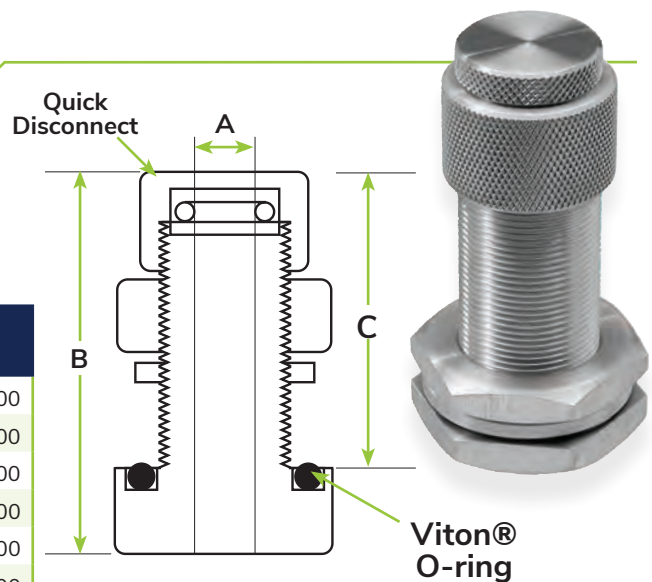
Baseplate to Quick Disconnect Transition Feedthrough

Stainless Steel

PART #	REFERENCE ID	A (in)	B (in)	C (in)	UNIT PRICE
2000050	BP100XQD12-2.62	0.125	2.62	2.37	\$260.00
2000051	BP100XQD25-2.62	0.25	2.62	2.37	\$260.00
2000052	BP100XQD38-2.62	0.375	2.62	2.37	\$260.00
2000053	BP100XQD50-2.62	0.50	2.62	2.37	\$260.00
2000054	BP100XQD62-2.62	0.625	2.62	2.37	\$260.00
2000055	BP100XQD75-2.62	0.75	2.62	2.37	\$260.00
2000057	BP100XQD100-4.25	1.00	4.25	2.37	\$330.00

Aluminum

PART #	REFERENCE ID	A (in)	B (in)	C (in)	UNIT PRICE
2000035	BP100XQD12-2.62-AL	0.125	2.62	2.37	\$220.00
2000036	BP100XQD25-2.62-AL	0.25	2.62	2.37	\$220.00
2000037	BP100XQD38-2.62-AL	0.375	2.62	2.37	\$220.00
2000038	BP100XQD50-2.62-AL	0.50	2.62	2.37	\$220.00
2000039	BP100XQD62-2.62-AL	0.625	2.62	2.37	\$220.00
2000040	BP100XQD75-2.62-AL	0.75	2.62	2.37	\$220.00
2000045	BP100XQD100-4.25-AL	1.00	4.25	2.37	\$285.00



Materials:

- 304 stainless steel
- Aluminium
- Blank plug included

Product Notes:

- Adapts from baseplate fitting to quick disconnect fitting
- Baseplate fitting designed to fit 1 inch diameter ports on baseplates up to 1 1/4 inches thick
- Convenient for mounting gauges, instruments or adding tube ports without welds

Options: Call for price and delivery

- Additional sizes

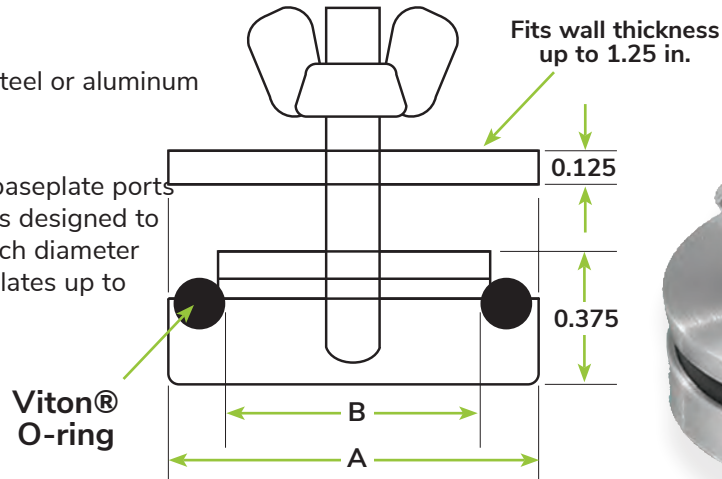
Baseplate Fitting - Blank Plug

Materials:

- 304 stainless steel or aluminum

Product Notes:

- Close unused baseplate ports
- Baseplate plugs designed to fit through 1 inch diameter ports on baseplates up to 1 inch thick



General Feedthroughs

PART #	REFERENCE ID	A (in)	B (in)	O-RING	DESCRIPTION	UNIT PRICE
2000025	075-FTBP-2.00	1.50	0.74	2-216	Stainless Steel Baseplate Plug for 0.75 in. Hole	\$66.00
2000026	100-FTBP-2.00	1.50	0.99	2-216	Stainless Steel Baseplate Plug for 1.00 in. Hole	\$66.00
2000027	125-FTBP-2.00	1.75	1.24	2-220	Stainless Steel Baseplate Plug for 1.25 in. Hole	\$105.00
2000028	150-FTBP-2.00	2.00	1.49	2-223	Stainless Steel Baseplate Plug for 1.50 in. Hole	\$120.00
2000029	175-FTBP-2.00	2.25	1.74	2-225	Stainless Steel Baseplate Plug for 1.75 in. Hole	\$135.00
2000010	100-FTBP-2.00-AL	1.50	0.99	2-216	Aluminum Baseplate Plug for 1 in. Hole	\$39.00

Vacuum Traps & Filters



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VACUUM TRAPS & FILTERS What's the Difference?



TRAPS: Capture vapors and gases.



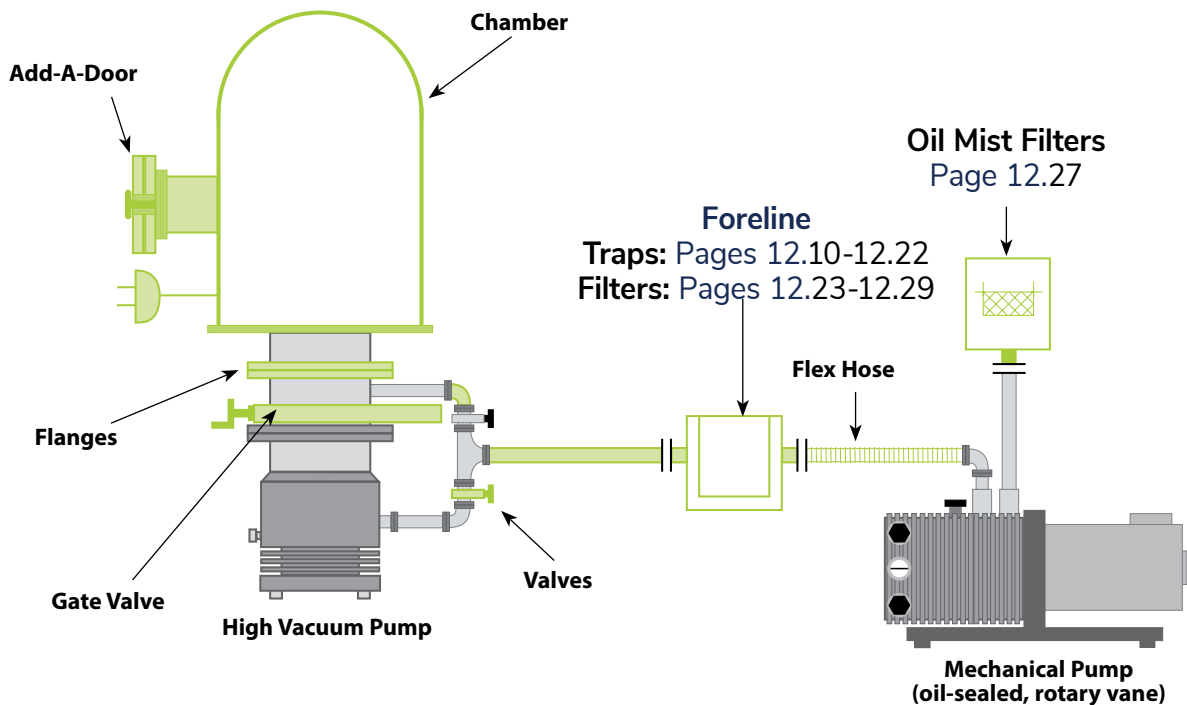
FILTERS: Capture particulates, dust, smoke, and aerosols.

Traps vs. Filters Introduction

In a high vacuum setting, traps and filters may be installed on a vacuum foreline, but each has a different function:

TRAPS: A trap is a device that is designed to capture vapors and gases.

FILTERS: A filter is a device that is designed to capture or reduce particulates, dust, smoke, and aerosols. A common filter function, for example, is to capture the oil mist (an aerosol) that is discharged from the outlet of an oil-sealed rotary vane mechanical pump.



To EP Or Not To EP? Electropolishing or Sandblasting?

By Garrett Hanrahan

If you intend to answer this question yourself before purchasing a custom-fabricated vacuum component, it helps to know what electropolishing can and cannot do for you in the context of your vacuum application.

What EP Can Do?

Enhance Component Cleanliness

The concentrated acidic solution baths used in EP thoroughly clean a component by removing contaminants that can be introduced during fabrication (dust, debris, lubricants, fingerprints, etc.) Moreover, the surface of a stainless-steel component is rendered smoother after undergoing EP, meaning the resultant surface is easier to sterilize repeatedly over the life of the component.



Sandblasted

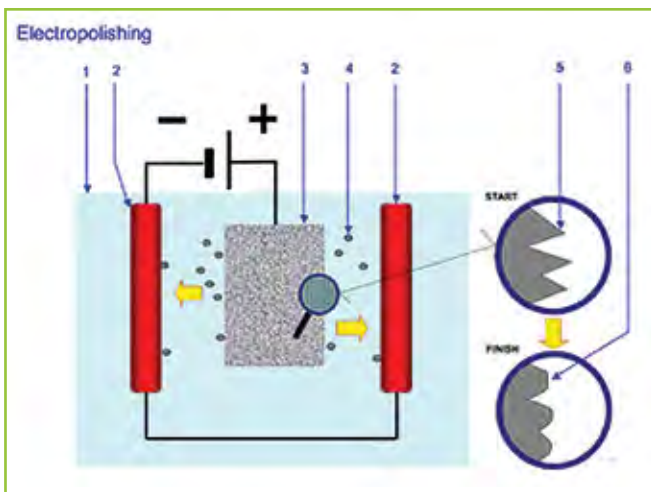
Electropolished

Prolong Component Life

The EP process passivates stainless-steel components by removing iron from the surface and enhancing the concentration of chromium and nickel. As a result, electropolished parts are less susceptible to corrosion over time.

Improve Aesthetic Quality

Electropolishing stainless steel concentrates chromium at the component's surface and smooths out microscopic peaks and valleys in the material. When the EP process is performed after the component has been adequately polished by mechanical means beforehand, the result is a bright, smooth, mirror-like finish that is uniform across the entire component. Additionally, electropolishing can polish areas of a component that would otherwise be inaccessible by other polishing methods due to component geometry.



Source: <https://en.wikipedia.org/wiki/Electropolishing>

Electropolishing principle:

1. Electrolyte
2. Cathode
3. Work-piece to polish (Anode)
4. Particle moving from the work-piece to the cathode
5. Surface before polishing
6. Surface after polishing

What EP Cannot Do

Achieve Exceptionally Smooth Surface Finishes On Its Own

The EP process serves to improve the surface finish that is already there, but it can only do so much. If you EP a rough, non-uniform, non-polished surface, the results will be neither aesthetically pleasing nor will they be particularly beneficial to the component's vacuum performance. EP works best when done after the component has been given a uniform finish by some mechanical means (e.g. glass-bead blasted, machine-polished). The mechanical method employed will be determined by the surface finish specification and vacuum-performance benefits you hope to achieve post-EP.

Drastically Improve Pump-Down Time

The notion that rougher stainless-steel surfaces outgas more than comparably smoother surfaces has been refuted by several studies. When it comes to pump-down time, the main benefit to be achieved through electropolishing is the reduction of a component's surface area at a microscopic level. This reduction in surface area allows water vapor to be more readily evacuated from the component's surface. At high-vacuum and ultra-high vacuum pressure levels, water vapor becomes the primary gas load within a vacuum system. If a vacuum component is specified to be baked out prior to installation, then the pump-down benefits of electropolishing become even more negligible since the bake-out process will remove most of the water vapor.

What's Best For You?

Will your component need to be sterilized regularly? Will it operate in a corrosive environment? Are aesthetics of critical importance? Are you concerned that water vapor may prevent you from reaching your desired vacuum level?

If the answer to any of these questions is yes, then it is likely that the added cost and lead time of electropolishing will be worthwhile for you.

If the answers to these questions is no, then you may be able to save both time and money by opting for a glass-bead-blasted or machine-polished finish for your component instead.



SELECTION CRITERIA

When selecting a trap or a filter, there are three selection criteria: **Body Style, Port Terminations, and Media.**

1. Body Style: A trap or filter's body style incorporates the geometry of the plumbing (i.e., coaxial, in-line, or right angle), body volume, and, in a few instances, the choice between a sealed and a rechargeable housing. The choice between a coaxial or an in-line body style is based on the geometry of your foreline and your system's available footprint.

The decision on body volume is determined from your anticipated gas loads. Typically, larger gas loads require larger body volumes. Larger body volumes provide a higher conductance and a lower frequency of media change-outs.

The choice between a sealed and a rechargeable trap is based on system runtime (continuous vs. intermittent) and cost. Sealed traps are discarded after the media has been consumed and are ideal for light gas loads or intermittent use. With rechargeable traps, the housing is reused and only the media is replaced.

Because a clamp, gasket, and two additional vacuum flanges are required to gain access to the media, rechargeable traps typically cost more than sealed traps. Rechargeable traps are ideal for high gas loads and continuous use.

2. Port Terminations: Port selection is based on ultimate base pressure. Systems with a base pressure of 10^{-3} Torr or higher can employ tube end terminations.

Systems with base pressures between 10^{-3} Torr and 10^{-8} Torr can employ elastomeric seals and terminations (ISO-QF and ISO-LF). Systems with base pressures less than 10^{-8} Torr require metal seals (CF-ULRIC®) and sealed traps.

3. Media: Media selection is entirely dependent on the trap or filter's intended function. The following six categories summarize the universe of trap and filter applications:

- Prevention of pump lubricant backstreaming;
- Capturing process gases;
- Capturing moisture and/or process condensibles;
- Capturing process particulates;
- Capturing mechanical pump discharge; and
- Reduction of system base pressure via cryopumping.

Please contact an **ANCORP** factory engineer or account representative with any questions regarding media selection.

Application Matrix

VacuShield: Application:	Sealed VSSC PAGES 10-11	Rechargeable VSRC PAGES 12-15	Molecular Sieve VSMI PAGES 17-18	LN2 VSCI PAGES 20-21	Dry Ice VSDI PAGES 21-22	VacuView VVRI PAGE 26	Small Particles VSPC VSPI PAGES 24-25	Large Particles (> 100 μ) VSPS PAGE 25	Oil Mist Filters VSHE, VSOE, VCEC, VCEA PAGES 27-29
Backstreaming	X	X	X						
Process Gases		X	X			X			
Moisture and/or Condensibles				X	X				
Process Particulates							X	X	
Mechanical Pump Discharge									X
Cryopumping				X					

The following table summarizes the media that are available with the various trap and filter styles.

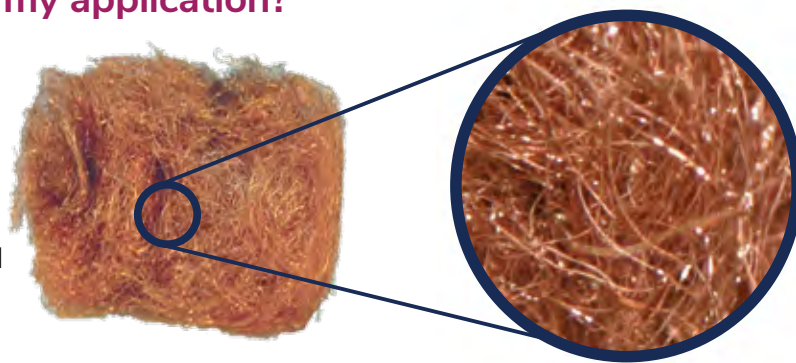
Trap and Filter Media Matrix

VacuShield: Media	Sealed VSSC PAGES 10-11	Rechargeable VSRC PAGES 12-15	Molecular Sieve VSMI PAGES 17-18	LN2 VSCI PAGES 20-21	Dry Ice VSDI PAGES 21-22	VacuView VVRI PAGE 26	Small Particles VSPC VSPI PAGES 24-25	Large Particles (> 100 μ) VSPS PAGE 25	Oil Mist Filters VSHE, VSOE, VCEC, VCEA PAGES 27-29
Alumina		X				X			
Borosilicate Fibers									X
Caustic Soda						X			
Charcoal		X				X			
Copper	X	X							
Dry Ice & Isopropanol					X				
Other Materials								X	
Liquid Nitrogen				X					
Molecular Sieve Zeolite			X						
Paper							X		
Polyester							X		
Stainless Steel	X	X							

Which trap media is best for my application?

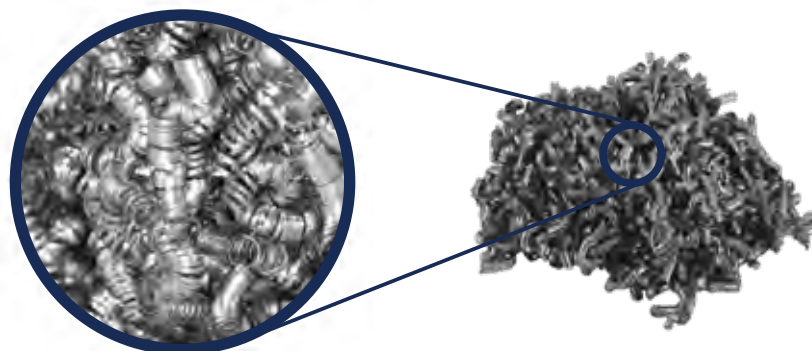
Copper vs. Stainless Steel

COPPER: ANCORP's fine mesh copper wool media provides a dense physical barrier against backstreaming pump lubricants. Copper, however, is a reactive metal that may not be compatible with all process effluents.



STAINLESS STEEL: ANCORP's coarse stainless steel media is an excellent physical barrier to backstreaming pump lubricants. The stainless steel media, however, is slightly less dense than fine mesh wool.

The advantage of stainless steel is its high level of corrosion resistance to many aggressive process environments. If your process requires PFPE type pump oils, then stainless steel is the recommended metallic media.



FORELINE VACUUM TRAPS: PRODUCT OVERVIEW

Foreline vacuum traps are installed between the mechanical pump and the high vacuum pump in a vacuum system. Foreline traps can perform three distinct functions within your vacuum system:

FUNCTION 1: Protect your high vacuum pump and/or chamber from pump oil backstreaming from the mechanical pump.

SOLUTION 1: Trapping with Copper or Stainless Steel Media

ANCORP VacuShield Foreline traps employ a two-stage trapping system. In the first stage, rogue hydrocarbons are blocked by a baffle that is attached near the trap's inlet. Hydrocarbons and other pump oils coalesce here and drip harmlessly back into the pump. In the second stage, vaporized pump oil is trapped by the trap's copper or stainless steel media which prevent line-of-sight travel between the inlet and outlet of the trap.

It is impossible for the hydrocarbon molecules to pass through the trap without colliding many thousands of times with the trap media and the trap's inner walls. Eventually, more than 99% of the pump's oil is captured and retained within the trap.

ANCORP's VacuShield Foreline traps come in two models: sealed and rechargeable. Sealed traps are replaced after the media becomes saturated or is used up. Sealed traps are an economical solution for applications with intermittent use or continuous use with light gas loads. Rechargeable traps reuse the trap's housing and require only the trap's media to be replaced.

SOLUTION 2: Molecular Sieve Trapping

The ANCORP molecular sieve trap employs synthetic zeolites (molecular sieve 13X) as an adsorbent. The large surface area provided by the numerous molecular-sized pores of the zeolite sieve provides excellent absorption of water vapor, oil vapor, and other gas molecules. Additionally, the zeolite sieve can be regenerated once it has become saturated with water vapor. This is accomplished through a bake-out cycle performed with the included, self-regulating heaters.

The molecular sieve trap is a multi-purpose trap. It is useful for the prevention of pump oil backstreaming as well as the reduction of the base vacuum through the removal of water vapor from the system.

FUNCTION 2: Protect your mechanical pump from process gasses and vapors:

This is the most challenging application because of the wide range of toxic and corrosive chemicals used in today's vacuum applications. While no means an exhaustive list, the following provides a brief guide to the more common applications.

SOLUTION 1: Rechargeable Traps

ANCORP's rechargeable traps may be purchased with a wide range of media including copper, stainless steel, activated alumina, and activated charcoal. Copper and stainless steel media are used exclusively to minimize backstreaming of mechanical pump oils. Activated alumina and activated charcoal are both effective moisture getters. That is, they are quite hydrophilic. However, they do become quickly saturated with moisture and must be replaced.

As a result, cold reservoirs are the preferred method for moisture trapping. Activated alumina is also an excellent trap for many acids. Activated charcoal is also an excellent trap for many heavy metals (such as mercury) and organic solvents.

SOLUTION 2: Molecular Sieve Zeolite

ANCORP's zeolite traps provide protection against a wide range of gases and vapors. In addition to being excellent mechanical pump oil getters, they are also excellent moisture traps. That is, zeolites are very hydrophilic.

Although zeolites saturate rapidly with moisture (as do activated charcoal and activated alumina), the onboard heaters allow this media to be periodically refreshed (regenerated) by driving off most of the water.

SOLUTION 3: VacuView

ANCORP's VacuView traps are designed with clear polycarbonate housings that provide a means to observe the surface of the media in-situ. The most

common media for these traps is caustic soda for the trapping of hydrous acids. Activated alumina and activated charcoal media are also available.

FUNCTION 3: Protect your rough vacuum pump from or reduce system pressure by eliminating water and other condensible or solvent vapors produced upstream within the vacuum system:

SOLUTION 1: Cold Trapping

The **ANCORP** VacuShield cold trap removes condensible vapor from the vacuum system before it can enter the pump. It also protects the system from lubricants that may backstream from the pump.

A secondary benefit of cold trapping is a reduction in base pressure as the trapping process also serves as a form of vacuum cryopump. The VacuShield cold trap utilizes the surface area of a cooled stainless steel Dewar to trap water and other condensible vapors. The reservoir is cooled by either liquid nitrogen or a dry ice and alcohol mixture.

All surfaces of the trap are electropolished to ease cleaning and deflect heat. The liquid nitrogen unit includes a vented stopper to reduce liquid nitrogen evaporation and assist in the maintenance of a stable temperature within the Dewar.

SOLUTION 2: Adsorption Trapping with Alumina or Charcoal

The **ANCORP** VacuShield adsorption traps utilize a two stage trapping system. This system protects the

pump from water and condensible vapor and protects the vacuum system from lubricants that may backstream from the pump. The first stage is a baffle welded to the lower containment screen within the trap. Condensibles from the pump coalesce here and are either trapped or drip harmlessly back into the pump.

In the second stage, all flow within the trap is directed through the tortuous porous trapping media. There are two options: activated alumina for acids and water vapor and activated charcoal for organics and heavy metals.

SOLUTION 3: Molecular Sieve Trapping

The **ANCORP** molecular sieve trap employs synthetic zeolite (molecular sieve 13X) as an adsorbent. The large surface area of the numerous molecular-sized pores of the zeolite sieve provides excellent adsorption of water vapor, oil vapor, and other gas molecules.

This trap operates at room temperature which reduces maintenance and cost as compared with the use of cold traps. Additionally, the zeolite sieve can be regenerated once it has become saturated with oil and water vapor. This is accomplished through a bake-out cycle performed with the integrated, self-regulating heaters. The molecular sieve trap is a multi-purpose trap.

It is useful for the prevention of pump oil backstreaming as well as the reduction of the base vacuum through the removal of water vapor from the system.

The following table provides a quick reference for media selection. Please contact an ANCORP factory engineer or account representative with any questions regarding media selection.

Trap & Filter Media	PUMP OIL BACKSTREAMING	WATER VAPOR	PARTICULATE	ACID	ORGANICS	OTHER CONDENSIBLE VAPOR
Metallic (copper, stainless steel)	X					
Alumina		X		X		
Charcoal					X	
Cold Reservoir		X				
Molecular Sieve (zeolite)	X	X				
Caustic Soda				X		

Model VSSC: Sealed Coaxial Vacuum Traps

The VSSC series foreline trap provides a low cost, non-rechargeable shield for your vacuum system from the effects of pump fluid backstreaming. The trapping medias are durable, dense copper or stainless steel held in place by recessed stainless steel screens. The housing is bead-blasted 304 stainless steel. Service by replacing the contaminated trap.



Sealed Traps: Hose Connection

Materials:

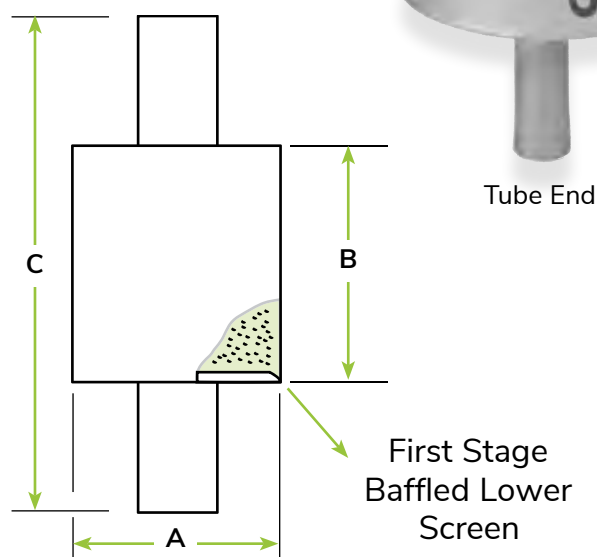
- Body: sand blasted 304L stainless steel
- Trapping media: copper or stainless steel

Product Notes:

- Trapping mechanics: adsorption

Benefits:

- Low cost system protection from pump oil backstreaming
- 2-stage trapping system
 - Stage 1:** stainless steel baffle – extends the life of the media
 - Stage 2:** coalescing media
- 304L stainless steel body, flanges and baffle
- Multiple connection options (ISO-QF, tube end, others on request)
- Simple, one-piece body design



7 Sealed Coaxial Vacuum Traps

PART #	REFERENCE ID	TUBE END CONNECTION (in)	TRAPPING MEDIA	HOUSING DIAMETER A (in)	BODY HEIGHT B (in)	OVERALL HEIGHT C (in)	UNIT PRICE
7500001	VSSC-250-075-C	0.75	Copper	2.50	3.05	6.05	\$150.00
7500002	VSSC-250-075-S	0.75	Stainless Steel	2.50	3.05	6.05	\$150.00
7500031	VSSC-250-100-C	1.00	Copper	2.50	3.05	6.05	\$155.00
7500032	VSSC-250-100-S	1.00	Stainless Steel	2.50	3.05	6.05	\$155.00
7500007	VSSC-400-075-C	0.75	Copper	4.00	4.55	8.55	\$160.00
7500008	VSSC-400-075-S	0.75	Stainless Steel	4.00	4.55	8.55	\$160.00
7500009	VSSC-400-100-C	1.00	Copper	4.00	4.55	8.55	\$175.00
7500010	VSSC-400-100-S	1.00	Stainless Steel	4.00	4.55	8.55	\$175.00
7500011	VSSC-400-150-C	1.50	Copper	4.00	4.55	8.55	\$185.00
7500012	VSSC-400-150-S	1.50	Stainless Steel	4.00	4.55	8.55	\$185.00
7500013	VSSC-400-200-C	2.00	Copper	4.00	4.55	8.55	\$200.00
7500014	VSSC-400-200-S	2.00	Stainless Steel	4.00	4.55	8.55	\$200.00

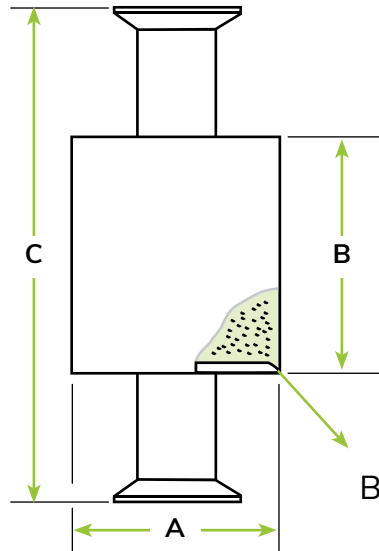
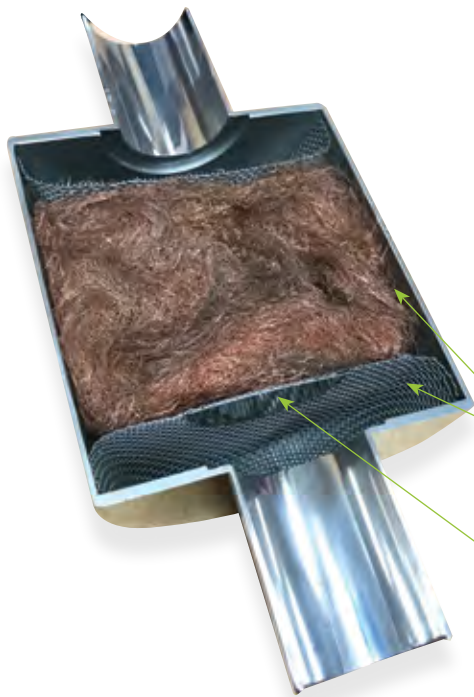
Sealed Traps: ISO-QF Connection

Materials:

- Body: bead-blasted 304L stainless steel
- Trapping media: copper or stainless steel

Product Notes:

- Trapping mechanics: adsorption
- Connection to system: ISO-QF flanges



First Stage Baffled Lower Screen



Benefits:

- Low cost system protection from pump oil backstreaming
- 2-stage trapping system
- **Stage 1:** stainless steel baffle – extends the life of the media
- **Stage 2:** coalescing media
- 304L stainless steel body, flanges and baffle
- Multiple connection options (ISO-QF, others on request)
- Simple, one-piece body design
- For Sealed and Rechargeable traps: The baffle plate and mesh block oil sputtered from the pump. The trapping media collects vaporized oil to be harmlessly dripped back into the pump.

PART #	REFERENCE ID	TUBE END CONNECTION	TRAPPING MEDIA	HOUSING DIAMETER A (in)	BODY HEIGHT B (in)	OVERALL HEIGHT C (in)	UNIT PRICE
7500003	VSSC-250-QF16-C	QF16 Flange	Copper	2.50	3.05	6.30	\$180.00
7500004	VSSC-250-QF16-S	QF16 Flange	Stainless Steel	2.50	3.05	6.30	\$180.00
7500005	VSSC-250-QF25-C	QF25 Flange	Copper	2.50	3.05	6.30	\$185.00
7500006	VSSC-250-QF25-S	QF25 Flange	Stainless Steel	2.50	3.05	6.30	\$185.00
7500015	VSSC-400-QF16-C	QF16 Flange	Copper	4.00	4.55	8.80	\$190.00
7500016	VSSC-400-QF16-S	QF16 Flange	Stainless Steel	4.00	4.55	8.80	\$190.00
7500017	VSSC-400-QF25-C	QF25 Flange	Copper	4.00	4.55	8.80	\$200.00
7500018	VSSC-400-QF25-S	QF25 Flange	Stainless Steel	4.00	4.55	8.80	\$200.00
7500019	VSSC-400-QF40-C	QF40 Flange	Copper	4.00	4.55	8.80	\$225.00
7500020	VSSC-400-QF40-S	QF40 Flange	Stainless Steel	4.00	4.55	8.80	\$225.00
7500021	VSSC-400-QF50-C	QF50 Flange	Copper	4.00	4.55	8.80	\$270.00
7500022	VSSC-400-QF50-S	QF50 Flange	Stainless Steel	4.00	4.55	8.80	\$270.00

Model VSRC: Rechargeable Vacuum Traps

The VSRC series foreline trap provides a rechargeable shield within your vacuum system. These traps can protect your system from backstreaming pump oil and/or your pump from contaminants created upstream within your system. The design of the rechargeable VacuShield traps allows multiple trapping media to be used with the same body. The VSRC traps have a coaxial port design for installation and a simple 2-piece clamped body design for easy media recharging and trap cleaning. A rechargeable trap is recommended for applications that experience heavy gas loads or continuous use.



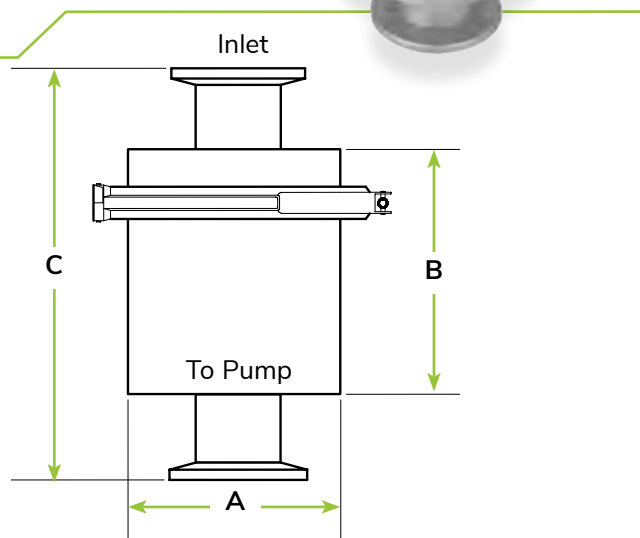
Rechargeable Traps: with Copper ISO-QF & LF Connection

Materials:

- Body, flanges and baffle: bead-blasted 304L stainless steel
- Seal: Buna-N
- Fully charged: replacement media is listed below.

Product Notes:

- Trapping media: **COPPER**. Provides protection from pump fluid backstreaming. See pg. 7.
- Flanged body connection for large body diameter to ease assembly and ensure consistent seals.
- 2-stage trapping system
 - Stage 1:** stainless steel baffle – extends the life of the media
 - Stage 2:** coalescing media



PART #	REFERENCE ID	TUBE END CONNECTION	HOUSING DIAMETER A (in)	BODY HEIGHT B (in)	OVERALL HEIGHT C (in)	UNIT PRICE
7500101	VSRC-200-QF16-C	QF16 Flange	2.00	3.80	5.90	\$300.00
7500111	VSRC-250-QF16-C	QF16 Flange	2.50	3.80	5.90	\$325.00
7500115	VSRC-250-QF25-C	QF25 Flange	2.50	3.80	5.90	\$335.00
7500121	VSRC-300-QF25-C	QF25 Flange	3.00	4.80	6.90	\$395.00
7500125	VSRC-300-QF40-C	QF40 Flange	3.00	4.80	6.90	\$430.00
7500131	VSRC-400-QF16-C	QF16 Flange	4.00	5.00	7.00	\$475.00
7500135	VSRC-400-QF25-C	QF25 Flange	4.00	5.00	7.00	\$485.00
7500139	VSRC-400-QF40-C	QF40 Flange	4.00	5.00	7.00	\$495.00
7500143	VSRC-400-QF50-C	QF50 Flange	4.00	5.00	8.00	\$515.00
7500151	VSRC-600-QF40-C	QF40 Flange	6.00	7.30	9.40	\$595.00
7500155	VSRC-600-QF50-C	QF50 Flange	6.00	7.30	10.40	\$625.00
7500159	VSRC-600-LF63-C	LF63 Flange	6.00	7.30	10.40	\$710.00
7500163	VSRC-600-LF80-C	LF80 Flange	6.00	7.30	10.40	\$765.00
7500171	VSRC-800-LF63-C	LF63 Flange	8.00	7.30	10.40	\$1085.00
7500175	VSRC-800-LF80-C	LF80 Flange	8.00	7.30	10.40	\$1105.00
7500179	VSRC-800-LF100-C	LF100 Flange	8.00	7.30	10.40	\$1130.00

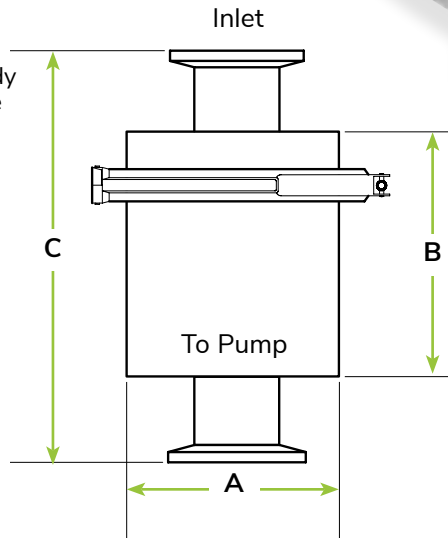
Rechargeable Traps: with Stainless Steel ISO-QF & LF Connection

Materials:

- Body, flanges and baffle: bead-blasted 304L stainless steel
- Seal: Buna-N
- Fully charged: replacement media is listed below.

Product Notes:

- Trapping media: **STAINLESS STEEL**. Provides protection from pump fluid backstreaming. See pg. 7.
- Flanged body connection for large body diameter to ease assembly and ensure consistent seals.
- 2-stage trapping system
Stage 1: stainless steel baffle – extends the life of the media
Stage 2: coalescing media



7

Rechargeable Traps: ISO-QF & LF

PART #	REFERENCE ID	TUBE END CONNECTION	HOUSING DIAMETER A (in)	BODY HEIGHT B (in)	OVERALL HEIGHT C (in)	UNIT PRICE
7500102	VSRC-200-QF16-S	QF16 Flange	2.00	3.80	5.90	\$300.00
7500112	VSRC-250-QF16-S	QF16 Flange	2.50	3.80	5.90	\$325.00
7500116	VSRC-250-QF25-S	QF25 Flange	2.50	3.80	5.90	\$335.00
7500122	VSRC-300-QF25-S	QF25 Flange	3.00	4.80	6.90	\$395.00
7500126	VSRC-300-QF40-S	QF40 Flange	3.00	4.80	6.90	\$430.00
7500132	VSRC-400-QF16-S	QF16 Flange	4.00	5.00	7.00	\$475.00
7500136	VSRC-400-QF25-S	QF25 Flange	4.00	5.00	7.00	\$485.00
7500140	VSRC-400-QF40-S	QF40 Flange	4.00	5.00	7.00	\$495.00
7500144	VSRC-400-QF50-S	QF50 Flange	4.00	5.00	8.00	\$515.00
7500152	VSRC-600-QF40-S	QF40 Flange	6.00	7.30	9.40	\$595.00
7500156	VSRC-600-QF50-S	QF50 Flange	6.00	7.30	10.40	\$625.00
7500160	VSRC-600-LF63-S	LF63 Flange	6.00	7.30	10.40	\$710.00
7500164	VSRC-600-LF80-S	LF80 Flange	6.00	7.30	10.40	\$765.00
7500172	VSRC-800-LF63-S	LF63 Flange	8.00	7.30	10.40	\$1085.00
7500176	VSRC-800-LF80-S	LF80 Flange	8.00	7.30	10.40	\$1105.00
7500180	VSRC-800-LF100-S	LF100 Flange	8.00	7.30	10.40	\$1130.00

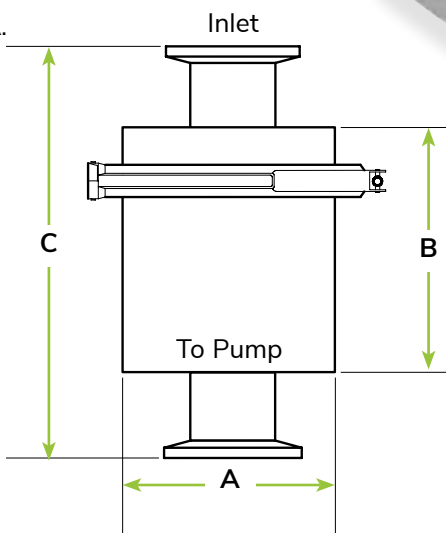
Rechargeable Traps: with Activated Alumina ISO-QF & LF Connection

Materials:

- Body, flanges and baffle: bead-blasted 304L stainless steel
- Seal: Buna-N
- Fully charged: replacement media is listed below.

Product Notes:

- Trapping media: **ACTIVATED ALUMINA.** Provides protection from pump fluid backstreaming.
- Flanged body connection for large body diameter to ease assembly and ensure consistent seals.
- 2-stage trapping system
Stage 1: stainless steel baffle – extends the life of the media
Stage 2: coalescing media



PART #	REFERENCE ID	TUBE END CONNECTION	HOUSING DIAMETER A (in)	BODY HEIGHT B (in)	OVERALL HEIGHT C (in)	UNIT PRICE
7500103	VSRC-200-QF16-A	QF16 Flange	2.00	3.80	5.90	\$300.00
7500113	VSRC-250-QF16-A	QF16 Flange	2.50	3.80	5.90	\$325.00
7500117	VSRC-250-QF25-A	QF25 Flange	2.50	3.80	5.90	\$335.00
7500123	VSRC-300-QF25-A	QF25 Flange	3.00	4.80	6.90	\$395.00
7500127	VSRC-300-QF40-A	QF40 Flange	3.00	4.80	6.90	\$430.00
7500133	VSRC-400-QF16-A	QF16 Flange	4.00	5.00	7.00	\$475.00
7500137	VSRC-400-QF25-A	QF25 Flange	4.00	5.00	7.00	\$485.00
7500141	VSRC-400-QF40-A	QF40 Flange	4.00	5.00	7.00	\$495.00
7500145	VSRC-400-QF50-A	QF50 Flange	4.00	5.00	8.00	\$515.00
7500153	VSRC-600-QF40-A	QF40 Flange	6.00	7.30	9.40	\$595.00
7500157	VSRC-600-QF50-A	QF50 Flange	6.00	7.30	10.40	\$625.00
7500161	VSRC-600-LF63-A	LF63 Flange	6.00	7.30	10.40	\$710.00
7500165	VSRC-600-LF80-A	LF80 Flange	6.00	7.30	10.40	\$765.00
7500173	VSRC-800-LF63-A	LF63 Flange	8.00	7.30	10.40	\$1085.00
7500177	VSRC-800-LF80-A	LF80 Flange	8.00	7.30	10.40	\$1105.00
7500181	VSRC-800-LF100-A	LF100 Flange	8.00	7.30	10.40	\$1130.00

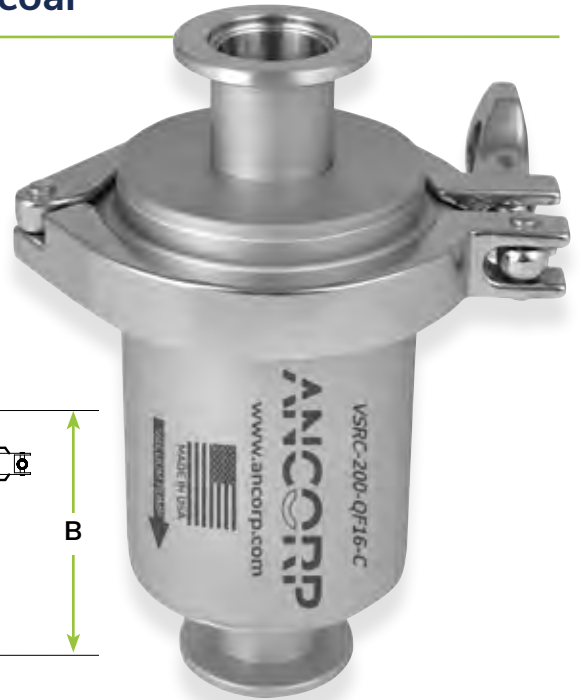
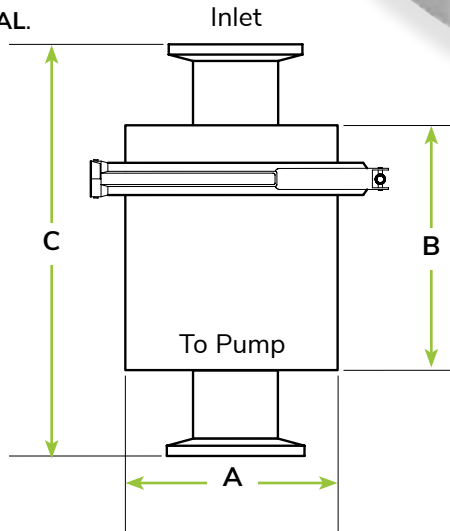
Rechargeable Traps: with Activated Charcoal ISO-QF & LF Connection

Materials:

- Body, flanges and baffle: bead-blasted 304L stainless steel
- Seal: Buna-N
- Fully charged: replacement media is listed below.

Product Notes:

- Trapping media: **ACTIVATED CHARCOAL.**
Provides protection from pump fluid backstreaming.
- Flanged body connection for large body diameter to ease assembly and ensure consistent seals.
- 2-stage trapping system
Stage 1: stainless steel baffle – extends the life of the media
Stage 2: coalescing media



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Rechargeable Traps: ISO-QF & LF

PART #	REFERENCE ID	TUBE END CONNECTION	HOUSING DIAMETER A (in)	BODY HEIGHT B (in)	OVERALL HEIGHT C (in)	UNIT PRICE
7500104	VSRC-200-QF16-O	QF16 Flange	2.00	3.80	5.90	\$300.00
7500114	VSRC-250-QF16-O	QF16 Flange	2.50	3.80	5.90	\$325.00
7500118	VSRC-250-QF25-O	QF25 Flange	2.50	3.80	5.90	\$335.00
7500124	VSRC-300-QF25-O	QF25 Flange	3.00	4.80	6.90	\$395.00
7500128	VSRC-300-QF40-O	QF40 Flange	3.00	4.80	6.90	\$430.00
7500134	VSRC-400-QF16-O	QF16 Flange	4.00	5.00	7.00	\$475.00
7500138	VSRC-400-QF25-O	QF25 Flange	4.00	5.00	7.00	\$485.00
7500142	VSRC-400-QF40-O	QF40 Flange	4.00	5.00	7.00	\$495.00
7500146	VSRC-400-QF50-O	QF50 Flange	4.00	5.00	8.00	\$515.00
7500154	VSRC-600-QF40-O	QF40 Flange	6.00	7.30	9.40	\$595.00
7500158	VSRC-600-QF50-O	QF50 Flange	6.00	7.30	10.40	\$625.00
7500162	VSRC-600-LF63-O	LF63 Flange	6.00	7.30	10.40	\$710.00
7500166	VSRC-600-LF80-O	LF80 Flange	6.00	7.30	10.40	\$765.00
7500174	VSRC-800-LF63-O	LF63 Flange	8.00	7.30	10.40	\$1085.00
7500178	VSRC-800-LF80-O	LF80 Flange	8.00	7.30	10.40	\$1105.00
7500182	VSRC-800-LF100-O	LF100 Flange	8.00	7.30	10.40	\$1130.00

Rechargeable Trap Replacement Media

With the exception of cold traps, ANCORP traps are sold fully charged with the desired media. Replacement media is available and listed below.



Copper Media

PART #	REFERENCE ID	HOUSING SIZE (in)	UNIT PRICE
7501001	VSR-200-C	2.00	\$25.00
7501011	VSR-250-C	2.50	\$30.00
7501021	VSR-300-C	3.00	\$40.00
7501031	VSR-400-C	4.00	\$50.00
7501051	VSR-600-C	6.00	\$90.00
7501071	VSR-800-C	8.00	\$140.00

Activated Alumina Media

PART #	REFERENCE ID	HOUSING SIZE (in)	UNIT PRICE
7501003	VSR-200-A	2.00	\$25.00
7501013	VSR-250-A	2.50	\$30.00
7501023	VSR-300-A	3.00	\$40.00
7501033	VSR-400-A	4.00	\$50.00
7501053	VSR-600-A	6.00	\$90.00
7501073	VSR-800-A	8.00	\$140.00

Stainless Steel Media

PART #	REFERENCE ID	HOUSING SIZE (in)	UNIT PRICE
7501002	VSR-200-S	2.00	\$25.00
7501012	VSR-250-S	2.50	\$30.00
7501022	VSR-300-S	3.00	\$40.00
7501032	VSR-400-S	4.00	\$50.00
7501052	VSR-600-S	6.00	\$90.00
7501072	VSR-800-S	8.00	\$140.00

Activated Charcoal Media

PART #	REFERENCE ID	HOUSING SIZE (in)	UNIT PRICE
7501004	VSR-200-O	2.00	\$25.00
7501014	VSR-250-O	2.50	\$30.00
7501024	VSR-300-O	3.00	\$40.00
7501034	VSR-400-O	4.00	\$50.00
7501054	VSR-600-O	6.00	\$90.00
7501074	VSR-800-O	8.00	\$140.00

7 Rechargeable Traps Replacement Media

Model VSMI: Molecular Sieve Vacuum Traps

The VSMI series foreline trap provides a rechargeable and regenerable shield within your vacuum system. These traps can protect your system from backstreaming pump oil and/or your pump from water created upstream within your system. The design of the VacuShield Molecular Sieve traps includes a heating element that allows the trapping media to be refreshed once the synthetic zeolite has become saturated with water. The VSMI traps have an in-line port design for easy installation and a simple threaded fill port design to facilitate synthetic zeolite recharge.

- **Trapping Media:** molecular sieve (SYNTHETIC ZEOLITE)
- **System protection from pump oil backstreaming**
- **Pump protection from water**
- **2-stage trapping system**
 - Stage 1:** Stainless Steel Baffle – extends the life of the media
 - Stage 2:** Adsorbent Media
- **Body:** bead-blasted 304L Stainless Steel
- **Rechargeable Media** – refresh saturated synthetic zeolite by baking with the included heater element or replace with fresh synthetic zeolite
- **Connection Options** (ISO-QF, tube end, others on request)

Molecular Sieve Traps: Hose Connection

Materials:

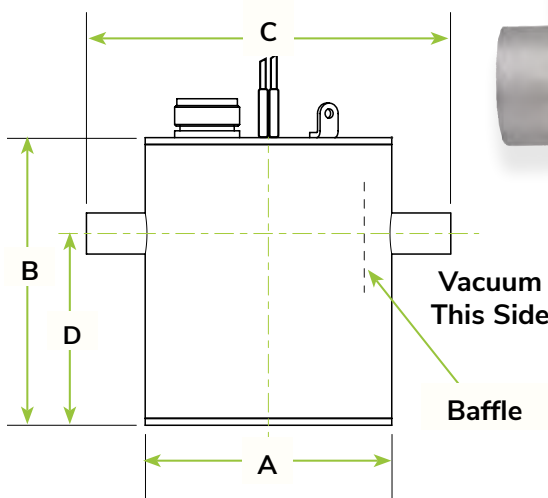
- Body, flanges and baffle: bead-blasted 304L stainless steel
- Seal: Buna-N

Product Notes:

- Trapping mechanics: adsorption
- Trapping media: SYNTHETIC ZEOLITE.
- Connection to system: tube ends

Heater Notes:

- -120 = 75w 120V AC
- -220 = 125w 220V AC



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Molecular Sieve Vacuum Traps

PART #	REFERENCE ID	TUBE END CONNECTION (in)	A (in)	B (in)	C (in)	D (in)	UNIT PRICE
7500321	VSMI-450-075-120	0.75	4.50	5.25	6.70	3.50	\$475.00
7500331	VSMI-450-075-220	0.75	4.50	5.25	6.70	3.50	\$475.00
7500322	VSMI-450-100-120	1.00	4.50	5.25	6.70	3.50	\$495.00
7500332	VSMI-450-100-220	1.00	4.50	5.25	6.70	3.50	\$495.00
7500323	VSMI-450-150-120	1.50	4.50	8.00	6.70	5.50	\$510.00
7500333	VSMI-450-150-220	1.50	4.50	8.00	6.70	5.50	\$510.00
7500324	VSMI-450-200-120	2.00	4.50	8.00	6.70	5.50	\$515.00
7500334	VSMI-450-200-220	2.00	4.50	8.00	6.70	5.50	\$515.00

Molecular Sieve Traps: ISO-QF Connection

Materials:

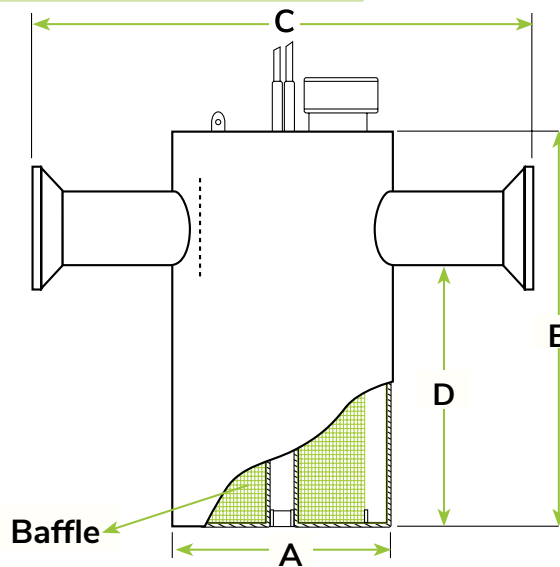
- Body, flanges and baffle: bead-blasted 304L stainless steel
- Seal: Buna-N

Product Notes:

- Trapping mechanics: adsorption
- Trapping media: **SYNTHETIC ZEOLITE.**
- Connection to system: ISO-QF flanges

Heater Notes:

- -120 = 75w 120V AC
- -220 = 125w 220V AC



PART #	REFERENCE ID	TUBE END CONNECTION	A (in)	B (in)	C (in)	D (in)	UNIT PRICE
7500301	VSMI-450-QF16-120	QF16	4.50	5.25	7.00	3.50	\$495.00
7500311	VSMI-450-QF16-220	QF16	4.50	5.25	7.00	3.50	\$495.00
7500302	VSMI-450-QF25-120	QF25	4.50	5.25	7.00	3.50	\$515.00
7500312	VSMI-450-QF25-220	QF25	4.50	5.25	7.00	3.50	\$515.00
7500303	VSMI-450-QF40-120	QF40	4.50	8.00	7.00	5.50	\$535.00
7500313	VSMI-450-QF40-220	QF40	4.50	8.00	7.00	5.50	\$535.00
7500304	VSMI-450-QF50-120	QF50	4.50	8.00	7.00	5.50	\$545.00
7500314	VSMI-450-QF50-220	QF50	4.50	8.00	7.00	5.50	\$545.00

Molecular Sieve Replacement Media

PART #	REFERENCE ID	TRAPPING MEDIA	HOUSING DIAMETER A (in)	BODY HEIGHT B (in)	UNIT PRICE
7510020	VSM-450-5-M	Synthetic Zeolite	4.50	5.25	\$42.00
7510021	VSM-450-8-M	Synthetic Zeolite	4.50	8.00	\$53.00

Molecular Sieve Replacement Parts and Accessories

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
7510350	VSM-H75-120	Molecular Sieve Trap Heater - 75 Watts, 120VAC	\$60.00
7510352	VSM-H75-220	Molecular Sieve Trap Heater - 75 Watts, 220VAC	\$75.00
7510354	VSM-H125-120	Molecular Sieve Trap Heater - 125 Watts, 120VAC	\$65.00
7510356	VSM-H125-220	Molecular Sieve Trap Heater - 125 Watts, 220VAC	\$75.00
7510358	VSM-HEC	Electrical Connection for Trap Heater - Hubble 7464-7465 Set	\$42.00

Model VSCI and VSDI: Cold Vacuum Traps

The VacuShield cold trap is capable of working with two different cooling agents. For high vacuum application, liquid nitrogen is the preferred agent and provides better trapping results. At low vacuum levels or during system pump down, a dry ice and alcohol mixture can be used. The trap is electropolished inside and out, has cap handles, and has a vented stopper all included standard. The VSCI traps have an in-line port design for installation and a simple 2-piece clamped body design to ease trap cleaning.

Recommended Options:

A third port is included on all LN2 traps except the 0.8 liter trap. This third port is intended to serve as a vacuum break or vent. Without some means to break vacuum on this line, the liquid nitrogen

- **Trapping Element:** cold Dewar
- **Pump protection from water and condensible vapor**
- **Multi-option trapping system**
 - Option 1:** liquid nitrogen for high vacuum trapping of condensible vapors
 - Option 2:** mixture of dry ice and alcohol to trap condensible vapors in low vacuum or during initial evacuation of your vacuum system
- **Simple, clamped two piece body design** – eases cleaning, assembly and provides a consistent seal

Dewar will be difficult to disassemble for cleaning or servicing. Under no circumstances should a screwdriver or similar tool be used to separate the liquid nitrogen Dewar from its stainless steel, vacuum jacketed housing.

The most common configuration for this port is to include a tee with the appropriate ISO-QF terminations. On one side of the tee an up-to-air valve is attached and, on the other side of the tee, a vacuum gauge is attached. The up-to-air valve allows the system to be safely vented and the vacuum gauge provides an additional check on the trap's base pressure to ensure vacuum integrity. Note: If a separate up-to-air valve is not employed or the vent port is sealed (blanked off) during use, some means of venting or breaking vacuum must be included in the inlet or outlet pumping lines.

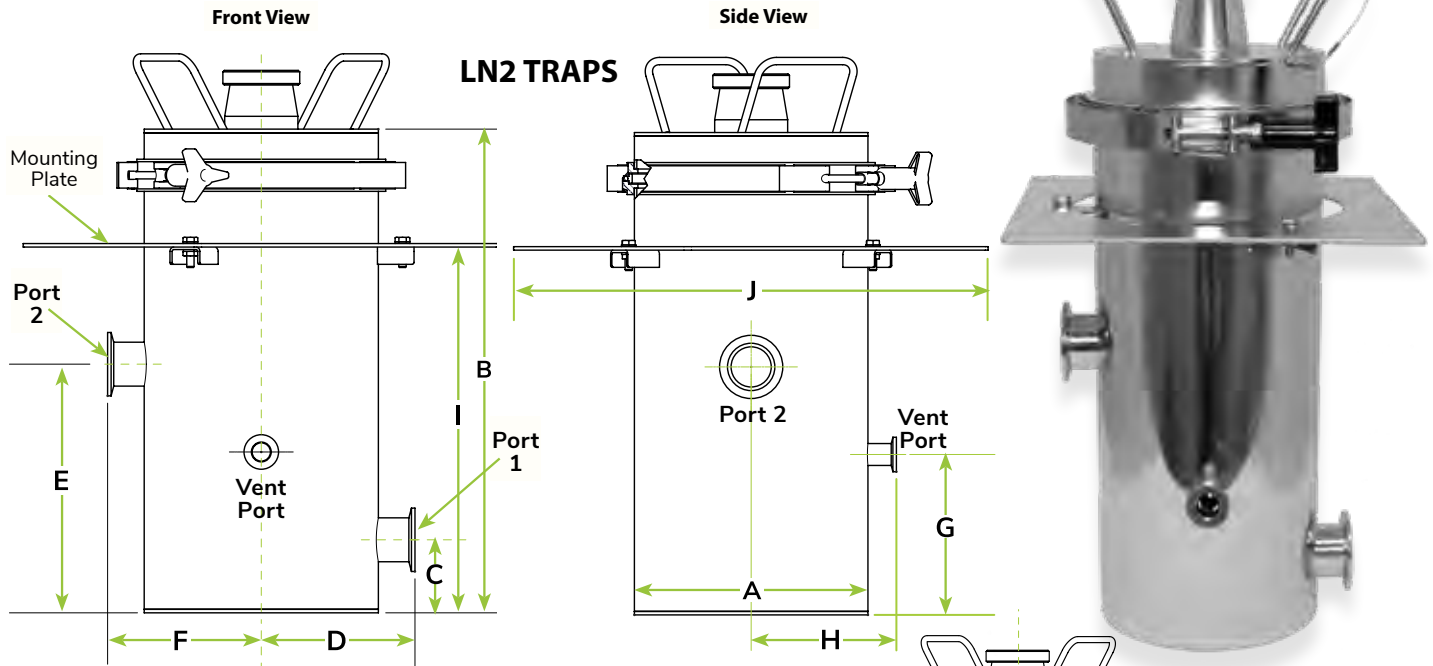
- **Electropolished Body:** eases cleaning, deflects heat and reduces iron concentration on trap surfaces which increases corrosion resistance
- **Cap handles included to ease handling of trap**
- **Large fill port**
- **Port Stopper Included** - reduces liquid nitrogen evaporation and assists in the maintenance of a stable temperature within the Dewar
- **Connection options** (ISO-QF, others on request)

Liquid Nitrogen or Dry Ice?

Water trapping is an excellent application for cold reservoirs and illustrates the choice between liquid nitrogen and dry ice traps. When molecules collide with a cold surface, they can surrender some of their (kinetic) energy to that surface. The colder the surface, the less energetic (i.e. slower) the particles will become. The temperature of liquid nitrogen is 77 K (-196° C) and a dry ice/isopropanol slurry is about 194 K (-79° C). The vapor pressure of water at 77 K is about 10⁻¹² Torr.

Therefore, water is effectively removed (cryopumped) from a vacuum system with a liquid nitrogen trap. Alternatively, the vapor pressure of water at 194 K is about 10⁻³ Torr. That is, a vacuum system trapping moisture with dry ice trap should expect a base pressure no better than about 1 milli Torr (or the highest vapor pressure of the condensibles being pumped).

Cold Traps: LN2 ISO-QF Connection



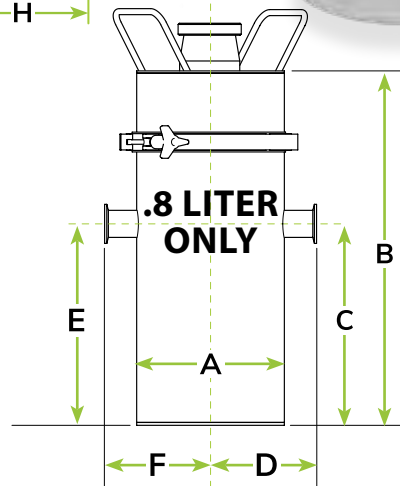
Materials:

- Body, flanges and baffle: 304 stainless steel electropolished
- Seal: Buna-N

Product Notes:

- Trapping mechanics: condensation
- Connection to system: ISO-QF flanges
- No mounting plate or exhaust vent on .8 liter

(All Dimension in Inches)



7 LN2 Cold Traps: ISO-QF

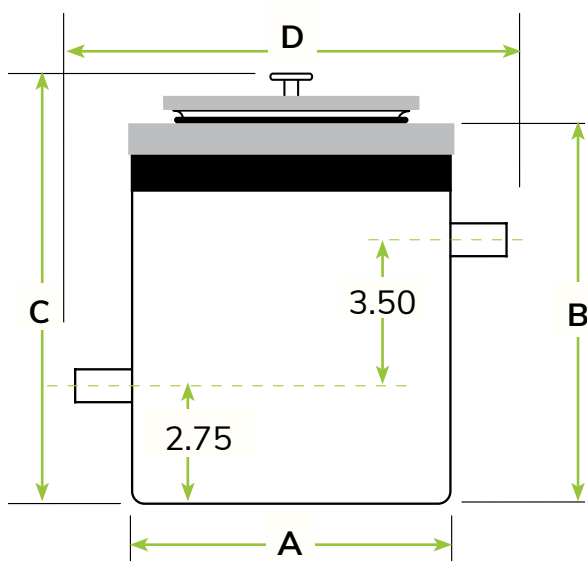
PART #	REFERENCE ID	TUBE END CONNECTION	VOL (L)	A	B	C	D	E	F	G	H	I	J	UNIT PRICE
7500404	VSCI-800-QF16	QF16 Flange	0.8	4.00	10.00	5.50	2.75	5.50	2.75	N/A	N/A	N/A	N/A	\$630.00
7500405	VSCI-800-QF25	QF25 Flange	0.8	4.00	10.00	5.50	2.75	5.50	2.75	N/A	N/A	N/A	N/A	\$655.00
7500406	VSCI-800-QF40	QF40 Flange	0.8	4.00	10.00	5.50	2.75	5.50	2.75	N/A	N/A	N/A	N/A	\$685.00
7500411	VSCI-1000-QF25	QF25 Flange	1.0	4.00	14.50	2.50	2.75	7.50	2.75	5.00	2.98	10.20	7.00	\$1095.00
7500412	VSCI-1000-QF40	QF40 Flange	1.0	4.00	14.50	2.50	2.75	7.50	2.75	5.00	2.98	10.20	7.00	\$1125.00
7500425	VSCI-2000-QF25	QF25 Flange	2.0	6.00	15.50	2.50	4.25	8.50	4.25	5.50	3.98	11.40	10.00	\$1580.00
7500426	VSCI-2000-QF40	QF40 Flange	2.0	6.00	15.50	2.50	4.25	8.50	4.25	5.50	3.98	11.40	10.00	\$1610.00
7500427	VSCI-2000-QF50	QF50 Flange	2.0	6.00	15.50	2.50	4.25	8.50	4.25	5.50	3.98	11.40	10.00	\$1650.00
7500431	VSCI-5000-QF25	QF25 Flange	5.0	8.00	16.50	2.50	5.25	8.50	5.25	5.50	4.98	12.50	12.00	\$2185.00
7500432	VSCI-5000-QF40	QF40 Flange	5.0	8.00	16.50	2.50	5.25	8.50	5.25	5.50	4.98	12.50	12.00	\$2215.00
7500433	VSCI-5000-QF50	QF50 Flange	5.0	8.00	16.50	2.50	5.25	8.50	5.25	5.50	4.98	12.50	12.00	\$2260.00

LN2 Replacement Parts

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
7510450	VSC-800-D	DEWAR Kit for 8 Liter - includes DEWAR and Plug	\$360.00
7510451	VSC-1000-D	DEWAR Kit for 1.0 Liter - includes DEWAR and Plug	\$645.00
7510452	VSC-2000-D	DEWAR Kit for 2.0 Liter - includes DEWAR and Plug	\$950.00
7510453	VSC-5000-D	DEWAR Kit for 5.0 Liter - includes DEWAR and Plug	\$1300.00
7510475	VSC-DPK-S	DEWAR Plug Kit for - Sizes .8, 1.0, and 2.0 Liters	\$28.00
7510476	VSC-DPK-L	DEWAR Plug Kit for - Size 5.0 Liter	\$37.00



Cold Traps: Dry Ice Tube Port Connection



7 Cold Traps: Dry Ice

Product Notes:

- Port terminations: tube end
- Media: use dry ice and isopropanol slurry for maximum cold trapping effect

Materials:

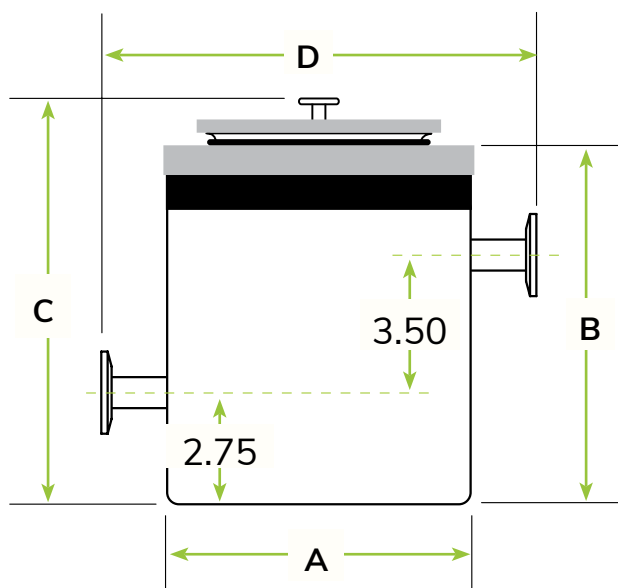
- Electropolished wetted surfaces: facilitates cleaning and servicing, promotes system cleanliness, and deflects heat to minimize frequency of media change-outs.
- Clear, loose fitting lid: see through design allows a quick check on condition of cold media. Loose fitting lid

provides a simple vent for sublimating carbon dioxide and prevents unsafe pressure build up.

- Clear view ring: see through design allows a quick visual check on condition of cold surface. Visually determine when cold surface needs to be cleaned due to ice bridges and pump lubricant deposition.

PART #	REFERENCE ID	TUBE END CONNECTION (in)	TRAPPING MEDIA	HOUSING DIAMETER A (in)	BODY HEIGHT B (in)	OVERALL HEIGHT C (in)	OVERALL WIDTH D (in)	UNIT PRICE
7500420	VSDI-800-050	0.50	Dry Ice	7.88	9.00	10.50	10.70	\$670.00
7500421	VSDI-800-075	0.75	Dry Ice	7.88	9.00	10.50	10.70	\$678.00

Cold Traps: Dry Ice ISO-QF Connection



Product Notes:

- Port terminations: ISO-QF
- Media: use dry ice and isopropanol slurry for maximum cold trapping effect

Materials:

- Electropolished wetted surfaces: facilitates cleaning and servicing, promotes system cleanliness, and deflects heat to minimize frequency of media change-outs.
- Clear, loose fitting lid: see through design allows a quick check on condition of cold media. Loose fitting lid provides a simple vent for sublimating carbon dioxide and prevents unsafe pressure build up.
- Clear view ring: see through design allows a quick visual check on condition of cold surface. Visually determine when cold surface needs to be cleaned due to ice bridges and pump lubricant deposition.

PART #	REFERENCE ID	TUBE END CONNECTION	TRAPPING MEDIA	HOUSING DIAMETER A (in)	BODY HEIGHT B (in)	OVERALL HEIGHT C (in)	OVERALL WIDTH D (in)	UNIT PRICE
7500422	VSDI-800-QF16	QF16	Dry Ice	7.88	9.00	10.50	11.00	\$665.00
7500423	VSDI-800-QF25	QF25	Dry Ice	7.88	9.00	10.50	11.00	\$675.00
7500424	VSDI-800-QF40	QF40	Dry Ice	7.88	9.00	10.50	11.00	\$690.00

Dry Ice Replacement Parts

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
7510400	VSDI-800-BSK	Replacement Seal Kit - Buna	\$60.00
7510401	VSDI-800-VSK	Replacement Seal Kit - Viton®	\$132.00
8751421	VSDI-800-ESK	Replacement Seal Kit - EPDM	CALL
7510410	VSDI-800-VR	Replacement Acrylic Viewing Ring	\$130.00
7510403	VSDI-800-LA	Replacement Acrylic Lid	\$70.00
7510476	VSC-DPK-L	DEWAR Plug Kit for - Size 5.0 Liter	\$37.00
7510415	VSDI-800-W	Replacement Stainless Steel Well	\$98.00



Foreline Vacuum Filter Product Overview

Foreline filters are installed between the mechanical pump and the high vacuum pump in a vacuum system. Oil mist filters are installed on the outlet of an oil-sealed rotary vane mechanical pump. Each serves a unique function:

FUNCTION 1: Protect your mechanical pump from dust and particulates generated upstream within the vacuum system:

SOLUTION 1: Particulate Filtration

For particulates between 10 and 100 microns in size, ANCORP particulate filters (VSPC and VSPI, pg. 24 and 25) are an excellent solution. Particulate filters may be configured with either paper (VSPC, pg. 24) or polyester (VSPI, pg. 25) media. Paper is the low cost option and is the more common choice. Paper filters, however, are unsuitable for wet applications and are disposable. Polyester filters may be reused after being cleaned with a shop vacuum or rinsed with soap and water and dried or both.

SOLUTION 2: Particulate Filtration

For particulates greater than 100 microns, ANCORP particulate separators (VSPS, pg. 25) are an excellent choice. Particulate filters use gravity and a series of baffles (a tortuous path) to separate large particles from their gaseous carriers.

FUNCTION 2: Protect your working environment from mechanical pump oil discharge:

SOLUTION 1: Open Exhaust Filters

ANCORP's VSOE (pg. 28) filters are a low cost solution to mechanical pump lubricant discharge. While retaining over 99% of the discharged pump oil, these filters do allow the pumped gasses to pass through into the surrounding environment. Therefore, this filter is suitable for vacuum applications based on breathable air.

SOLUTION 2: Closed Exhaust Filters

ANCORP's VCEC (pg. 29) and VCEA (pg. 29) filters capture mechanical pump oil discharge and allow the system's gaseous exhaust to be pumped away to a scrubber or an outside exhaust. The filter's body seal, however, is not a standard flanged vacuum seal and therefore is not intended for toxic or corrosive applications.

SOLUTION 3: Hermetic Exhaust Filters

ANCORP's VSHE (pg. 27) filters trap more than 99% of the mechanical pump's lubricants and allow the captured lubricants to be transported back to the pump via a series of internal channels and a one-way valve. In addition, the filter's housing is sealed with an elastomeric high vacuum flange. As a result, chamber gases that are compatible with Buna-N seals may be safely transported to a scrubber or exhaust system.

Trap and Filter Media

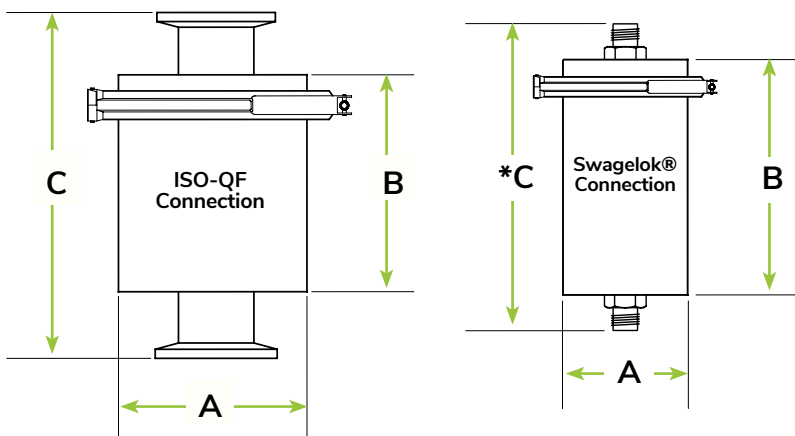
FILTER MEDIA	PUMP OIL BACKSTREAMING	WATER VAPOR	PARTICULATE	ACID	ORGANICS	OTHER CONDENSIBLE VAPOR
Borosilicate Fibers						X
Filter (polyester, paper)			X			X
Gravity			X			
Borosilicate Fibers						X

Table provides a quick reference for media selection. Please contact an ANCORP factory engineer or account representative with any questions regarding media selection.

Model VSPC, VSPI, and VSPS: Particulate Filters

Large filters are designed to capture particulates 100 microns or larger. Small filters are designed to capture particulates ranging from 10 to 100 microns -nominally. Large filters (we call these filters particulate separators) use gravity and stainless steel baffles as a media. Small filters have two media: paper and polyester. Both paper and polyester media have a nominal mesh size of about 10 microns. Paper filters are a low cost, disposable solution for dry applications. Polyester filters can be cleaned and reused.

Particulate Foreline Filters: Coaxial Ports Swagelok® and ISO-QF Connection



Materials:

- Body: bead-blasted 304 stainless steel
- Seals: Buna N

Product Notes:

- Port Terminations: Swagelok® and ISO-QF
- Media: paper

- *(On Swagelok® connection: C dimension is from male nut to male nut.)
- Rechargeable housing: allows rapid, in-situ vacuum gasket servicing and media replacement. Elastomeric gasket and stainless steel clamp suitable for high vacuum applications.

PART #	REFERENCE ID	TUBE END CONNECTION (in)	HOUSING DIAMETER A (in)	BODY HEIGHT B (in)	OVERALL HEIGHT C (in)	UNIT PRICE
7500501	VSPC-200-25SWG	0.25 Swagelok®	2.00	3.80	5.20	\$395.00
7500502	VSPC-200-38SWG	0.375 Swagelok®	2.00	3.80	5.20	\$480.00
7500503	VSPC-200-50SWG	0.50 Swagelok®	2.00	3.80	5.40	\$525.00
7500510	VSPC-300-QF25	QF25	3.00	3.50	5.50	\$420.00
7500511	VSPC-400-QF40	QF40	4.00	3.50	5.50	\$515.00
7500512	VSPC-400-QF50	QF50	4.00	3.50	6.50	\$545.00

Particulate - Coaxial Replacement Media

PART #	REFERENCE ID	FILTER BODY SIZE A (in)	FILTER MEDIA	UNIT PRICE
7510501	VSPC-200-F	2.00	Industrial paper filter 2U for 2 in. dia body	\$39.00
7510510	VSPC-300-F	3.00	Industrial paper filter 2U for 3 in. dia body	\$44.00
7510511	VSPC-400-F	4.00	Industrial paper filter 2U for 4 in. dia body	\$46.00

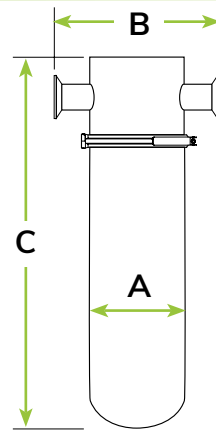
Particulate Foreline Filters: In-Line Ports ISO-QF Connection

Materials:

- Body: 304 stainless steel
- Seals: Buna N

Product Notes:

- Port Terminations: ISO-QF
- Media: polyester
- Rechargeable housing: allows rapid, in-situ vacuum gasket servicing and media replacement. Elastomeric gasket and stainless steel clamp suitable for high vacuum applications.



PART #	REFERENCE ID	TUBE END CONNECTION	HOUSING DIAMETER A (in)	BODY HEIGHT B (in)	OVERALL HEIGHT C (in)	UNIT PRICE
7500525	VSPI-400-QF25	QF25	4.00	15.00	6.00	\$850.00
7500526	VSPI-600-QF40	QF40	6.00	16.50	8.50	\$1475.00

Particulate - In-Line Replacement Media

PART #	REFERENCE ID	FILTER BODY SIZE A (in)	FILTER MEDIA	UNIT PRICE
7510525	VSPI-400-F	4.00	Polyester particulate filter 10U	\$75.00
7510526	VSPI-600-F	6.00	Polyester particulate filter 10U	\$200.00

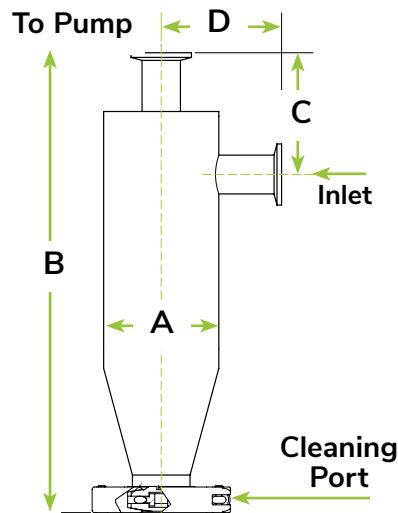
Particulate Separator Filters: ISO-QF Connection

Materials:

- Body: 304 stainless steel
- Clamp: Aluminum
- Seals: Buna N

Product Notes:

- Port Terminations: ISO-QF
- Media: gravity and internal stainless steel baffles
- Electropolished: facilitates cleaning and servicing and promotes system cleanliness
- Applications: suitable for dusts and particulates greater than 100 microns. Also an excellent solution for back siphoning accidents.



PART #	REFERENCE ID	TUBE END CONNECTION	HOUSING DIAMETER A (in)	BODY HEIGHT B (in)	C (in)	D (in)	UNIT PRICE
7500601	VSPS-300-QF25	QF25 Port	3.00	12.00	3.14	3.14	\$490.00
7500605	VSPS-400-QF40	QF40 Port	4.00	14.00	3.14	3.52	\$601.00

7

VSPI, VSPI & VSPS Particulate Filters

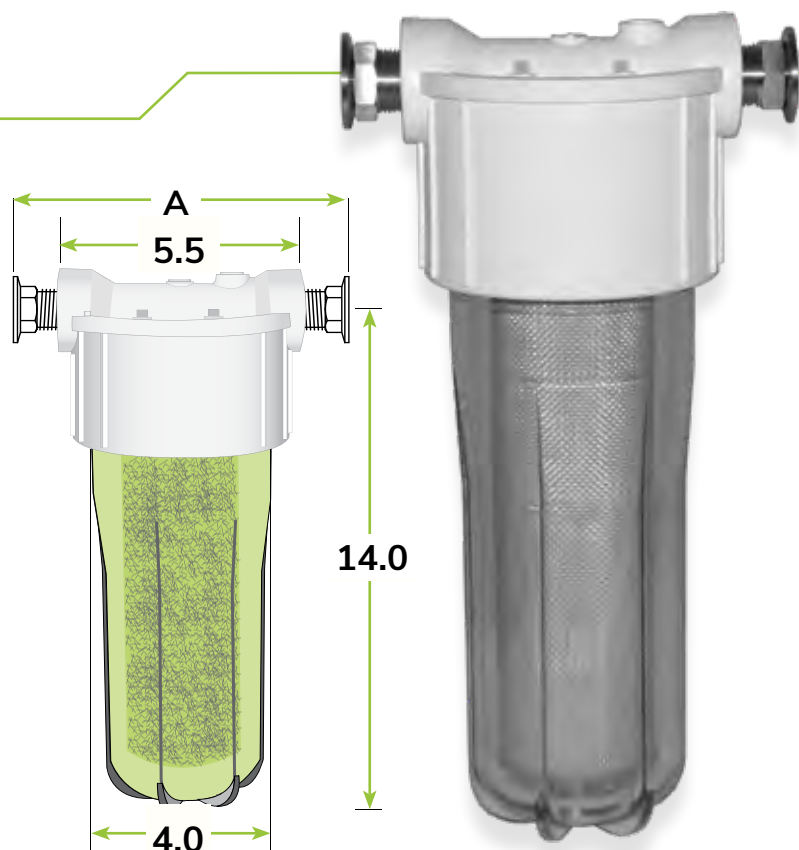
VacuView Filters: ISO-QF Connection

Materials:

- Clear housing: The see through design allows quick visual check on condition of media and amount of trapped or neutralized contaminants. The clear housing maximizes utility of outside-in flow design.

Product Notes:

- Port terminations: ISO-QF
- Media: caustic soda (for hydrous acid neutralization), activated alumina, or activated charcoal.
- Dimension A: represents the approximate length between flanges depending on how tightly the ends are screwed in.
- Rechargeable housing: allows in-situ vacuum gasket servicing and media replacement.
- Port labels: Installation orientation is critical for this outside-in trap design. Inlet and Pump are clearly identified on the product labeling.



7

VacuView Filters: ISO-QF

PART #	REFERENCE ID	TUBE END CONNECTION	FILTER MEDIA	A (in)	UNIT PRICE
7500701	VVRI-1000-QF16-CS	QF16	Caustic Soda	7.00	\$290.00
7500702	VVRI-1000-QF25-CS	QF25	Caustic Soda	7.20	\$290.00
7500703	VVRI-1000-QF16-A	QF16	Activated Alumina	7.00	\$290.00
7500704	VVRI-1000-QF25-A	QF25	Activated Alumina	7.20	\$290.00
7500705	VVRI-1000-QF16-O	QF16	Activated Charcoal	7.00	\$290.00
7500706	VVRI-1000-QF25-O	QF25	Activated Charcoal	7.20	\$290.00

VacuView Replacement Media

PART #	REFERENCE ID	FILTER MEDIA	UNIT PRICE
7510701	VVR-1000-CS	Caustic Soda Replacement Media	\$80.00
7510702	VVR-1000-A	Activated Alumina Replacement Media	\$80.00
7510703	VVR-1000-O	Activated Charcoal Replacement Media	\$80.00

VacuView Accessories

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
7510730	VVR-MK	Mounting Kit - contains Bracket with 4 Standoffs and Bolts	\$85.00

Model VSHE, VSOE, VCEC and VCEA: Oil Mist Filters

Oil mist filters are installed on the outlet port of an oil-sealed, rotary vane mechanical vacuum pump. During each exhaust cycle, process chamber gases along with a tiny amount of pump lubricant leave the pump. If left uncorrected, over time, a greasy film of pump lubricant will form around the pump's outlet. Oil mist filters capture this lubricant and, in some instances, return the pump lubricant to the pump's oil reservoir. **ANCORP** manufactures three (3) styles of oil mist filters. The VSOE or open-exhaust oil mist filter is a low cost solution designed for air only applications. That is, the VSOE captures the pump's lubricants but discharges the process gases into the area surrounding the pump. The VCEC/VCEA or closed-exhaust allows the process gases to be piped away to a scrubber

or external exhaust line. The VCEC/VCEA's steel housing has an enamel finish and employs integrated body tabs to form the vacuum seal. While suitable for vacuum applications requiring an elastomer seal, this filter is not recommended for aggressive or toxic applications. In addition to allowing the exhaust gases to be piped safely to a scrubber or external exhaust, the VSHE or hermetic exhaust filter is equipped with a rechargeable, machined stainless steel housing. The vacuum seal is formed with elastomeric gaskets (i.e. Buna-N) and stainless steel clamps. The VSHE is the best solution for those critical applications requiring high vacuum seals throughout the process piping run. All three oil mist filters use borosilicate glass fiber media.

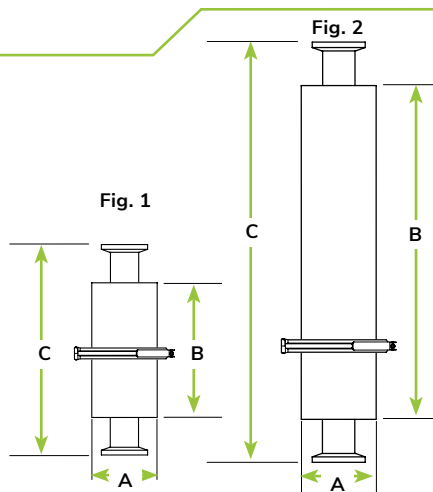
Hermetic Exhaust Filters: ISO-QF Connection

Materials:

- Stainless steel

Product Notes:

- Port Terminations: ISO-QF
- Media: borosilicate glass fiber
- Rechargeable, 304 stainless steel housing: allows rapid, in-situ vacuum gasket servicing and media replacement. Elastomeric gasket and stainless steel clamp suitable for high vacuum applications.



PART #	REFERENCE ID	FIGURE	HOUSING DIAMETER A (in)	BODY HEIGHT B (in)	OVERALL LENGTH C (in)	UNIT PRICE
7505001	VSHE-S-QF25	1	2.50	4.80	6.90	\$420.00
7505002	VSHE-L-QF25	2	2.50	11.30	13.30	\$480.00
7505003	VSHE-L-QF40	2	2.50	11.30	13.30	\$490.00

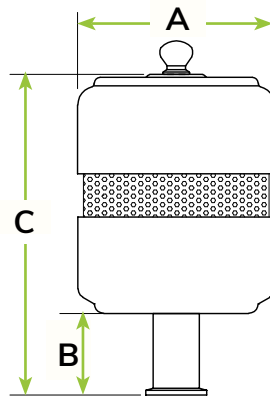
Hermetic Exhaust Replacement Media

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
7515001	HE-RF-S	Replacement Filter for Short Body	\$20.00
7515002	HE-RF-L	Replacement Filter for Long Body	\$42.00
7515005	HE-RFK-S	Replacement Filter Kit for Short Body - includes Filter Caps	\$98.00
7515006	HE-RFK-L	Replacement Filter Kit for Long Body - includes Filter Caps	\$120.00

Open Exhaust Filter: ISO-QF and NPT Connection

Product Notes:

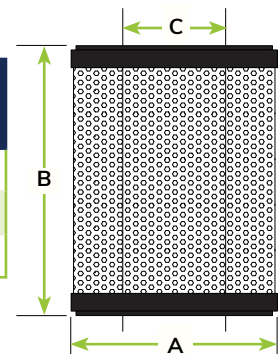
- Port Terminations: ISO-QF and NPT
- Media: borosilicate glass fiber



PART #	REFERENCE ID	CONNECTION	CFM	HOUSING DIAMETER A (in)	HEIGHT B (in)	OVERALL LENGTH C (in)	UNIT PRICE
7505105	VSOE-5-50NPT	0.50 in NPT	4.50	2.50	0.90	4.00	\$83.00
7505110	VSOE-5-QF16	QF16	4.50	2.50	0.90	4.00	\$99.00
7505111	VSOE-5-QF25	QF25	4.50	2.50	0.90	4.00	\$105.00
7505112	VSOE-7-QF25	QF25	7.00	2.50	0.90	5.00	\$110.00
7505120	VSOE-10-QF25	QF25	24.00	5.10	2.10	8.50	\$165.00

Open Exhaust Replacement Media

PART #	REFERENCE ID	DESCRIPTION	HOUSING DIAMETER A (in)	BODY HEIGHT B (in)	INNER DIAMETER C (in)	UNIT PRICE
7515111	VOE-RF5	For VSOE-5-50NPT, -QF16, -QF25	2.25	3.00	1.25	\$22.00
7515112	VOE-RF7	For VSOE-7-QF25	2.25	4.00	1.25	\$28.00
7515120	VOE-RF10	For VSOE-10-QF25	4.00	6.00	3.00	\$85.00



Closed Exhaust Replacement Media

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
7515205	VCE-RF8	For VCEC-8-QF16 and VCEC-8-QF25	\$41.00
7515201	VCE-RF50	For VCEA-50-150NPT	\$58.00
7515210	VCE-RF125	For VCEA-125-200NPT	\$96.00
7515211	VCE-RF175	For VCEA-175-200NPT	\$150.00

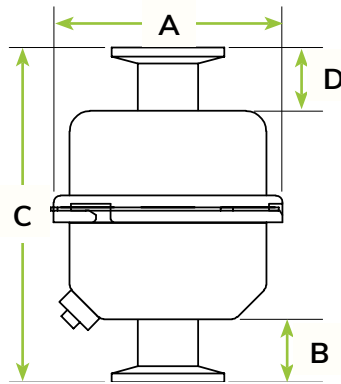
Closed Exhaust Replacement Kits

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
7515218	VCE-RK50	For VCEA-50-150NPT	CALL
7515216	VCE-RK125	For VCEA-125-200NPT	CALL
7515216	VCE-RK175	For VCEA-175-200NPT	CALL

Closed Exhaust Filter: Coaxial ISO-QF Connection

Product Notes:

- Port Terminations: ISO-QF
- Media: borosilicate glass fiber
- Rechargeable, enameled steel housing: allows rapid, in-situ vacuum gasket servicing and media replacement.
- Integral oil drain: allows captured oil to be safely discarded.

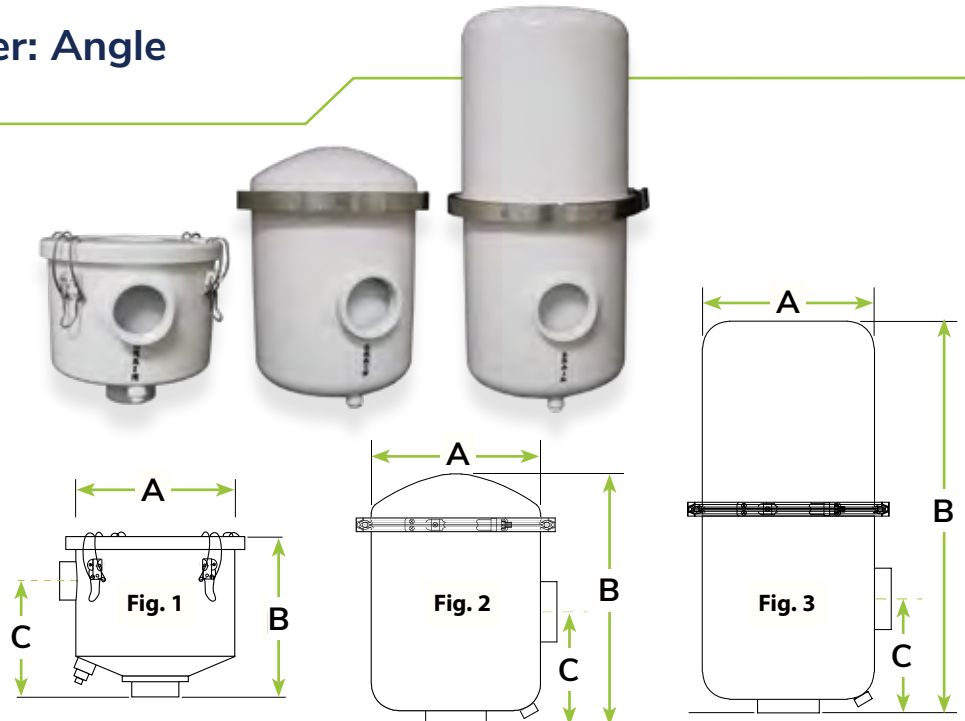


PART #	REFERENCE ID	CONNECTION	CFM	HOUSING DIAMETER A (in)	BODY HEIGHT B (in)	OVERALL HEIGHT C (in)	LENGTH D (in)	UNIT PRICE
7505205	VCEC-8-QF16	QF16	8	3.25	0.88	4.69	0.88	\$145.00
7505206	VCEC-8-QF25	QF25	8	3.25	0.88	4.69	0.88	\$250.00

Closed Exhaust Filter: Angle NPT Connection

Product Notes:

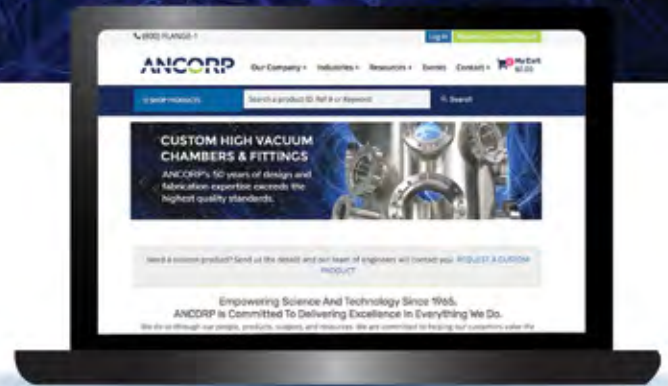
- Port Terminations: NPT
- Media: borosilicate glass fiber
- Rechargeable, enameled steel housing: allows rapid, in-situ vacuum gasket servicing and media replacement.
- Integral oil drain: allows captured oil to be safely discarded.
- NPT to ISO-QF Hybrid adapter available upon request



PART #	REFERENCE ID	CONNECTION	CFM	FIG	HOUSING DIAMETER A (in)	OVERALL LENGTH B (in)	LENGTH C (in)	UNIT PRICE
7505201	VCEA-50-150NPT	1.50 in. Female NPT	50	1	7.32	6.75	4.62	\$180.00
7505210	VCEA-125-200NPT	2.00 in. Female NPT	125	2	8.75	11.25	5.00	\$430.00
7505211	VCEA-175-200NPT	2.00 in. Female NPT	175	3	8.75	17.50	5.00	\$510.00

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Roughing Vacuum Components



Roughing Vacuum Components Overview 8.3

Flexible Nipples (Bellows)

ISO-QF Bellows	8.4
CF Bellows, Rotatable	8.4
ASA/ANSI Bellows, Rotatable	8.5
ISO-LF Bellows.....	8.6
ASA/ANSI Bellows, Fixed.....	8.6

ISO Flexible Metal Hose

ISO-QF/LF Bellows Metal Hose - Thin Wall	8.7
ISO-QF/LF Metal Hose - Medium Wall	8.8

CF Flexible Metal Hose

CF Flexible Bellows Metal Hose - Thin Wall	8.9
CF Flexible Metal Hose - Medium Wall	8.10

Weldable End Flexible Fittings

Weldable End Flexible Bellows Metal Hose - Thin Wall	8.11
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PVC Flexible Fittings

QF Flexible PVC Hose	8.13
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Hose Adapters

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Hose Adapter to QF - Stainless Steel	8.14
Hose Clamps	8.14

Roughing Vacuum COMPONENTS

This section offers a selection of products for the rough vacuum section of your system. Flexible vacuum hose assists in connecting sections of your system that are misaligned or with vibration isolation. PVC vacuum fittings and tubing are an economical means of running rough vacuum and exhaust lines.



8 Roughing Vacuum Components

Overview

Vacuum flexible hose is the best solution for misaligned vacuum ports or for those applications where straight plumbing is simply not an option. These products are also excellent vibration dampeners. Flexible vacuum hose is available in stainless steel or wire-reinforced PVC.

PVC vacuum fittings are an excellent money saving option for rough vacuum plumbing and exhaust lines. One advantage provided by PVC fittings is easy on site customization of the fittings and tubing that you purchase.

ISO-QF Bellows

Materials:

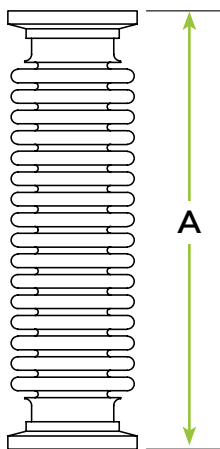
- Flanges: 304 stainless steel
- Flexible hose: 321 stainless steel

Product Notes:

- Corrects misaligned connections

Options: Call for price and delivery

- Custom lengths
- Custom flange combination



PART #	REFERENCE ID	HOSE I.D. (in)	WALL (in)	A (in)	UNIT PRICE
0800000	QF16-075-B-4.0	0.75	0.006	4.00	\$70.00
0800001	QF25-100-B-4.0	1.00	0.006	4.00	\$75.00
0800002	QF40-150-B-4.0	1.50	0.006	4.00	\$120.00
0800003	QF50-200-B-4.0	2.00	0.006	4.00	\$110.00

CF Bellows - Rotatable

Materials:

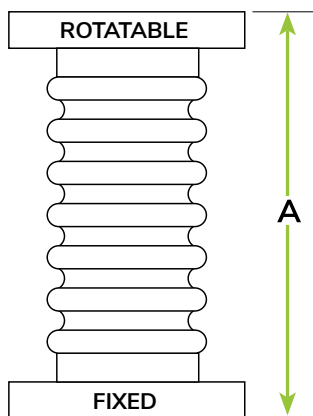
- Flanges: 304 stainless steel
- Flexible hose: 321 stainless steel formed bellows

Product Notes:

- Corrects misaligned connections
- Compress up to 20% or extend up to 15% of free length

Options: Call for price and availability

- Custom lengths
- Tapped flanges
- Custom flange combination
- Alternative materials: (i.e. 316L stainless steel)



PART #	REFERENCE ID	FLANGE TYPE	HOSE I.D. (in)	WALL (in)	A (in)	UNIT PRICE
0800089	CF133-075-B-4.0	CF133	0.75	0.006	4.00	\$155.00
0800092	CF212-100-B-4.0	CF212	1.00	0.006	4.00	\$155.00
0800095	CF275-150-B-4.0	CF275	1.50	0.006	4.00	\$190.00
0800098	CF338-150-B-4.0	CF338	2.00	0.006	4.00	\$230.00
0800099	CF450-250-B-6.0	CF450	2.50	0.006	6.00	\$400.00
0800100	CF462-300-B-6.0	CF462	3.00	0.008	6.00	\$360.00
0800101	CF600-400-B-6.4	CF600	4.00	0.008	6.40	\$505.00
0800103	CF800-600-B-8.5	CF800	6.00	0.010	8.50	\$755.00

ASA Bellows - Rotatable

Materials:

- Flanges: 304 stainless steel
- Flexible hose: 321 stainless steel formed bellows

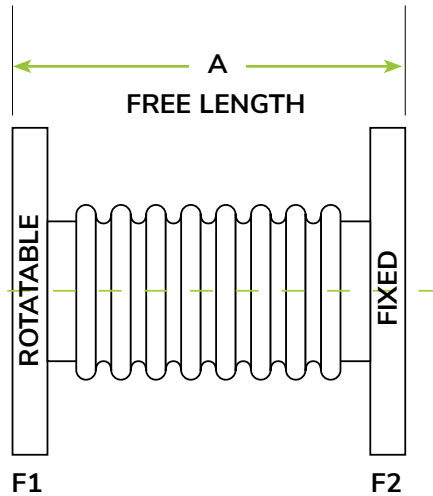
Product Notes:

- Corrects misaligned connections
- One fixed and one rotatable flange per fitting
- O-ring groove available

Options:

Call for price and delivery

- Larger sizes
- Custom lengths
- Custom flange combinations



PART #	REFERENCE ID	FLANGE TYPE	HOSE I.D. (in)	WALL THICKNESS (in)	A (in)	UNIT PRICE
0800197	ASA100-100-B-4.00	ASA100	1.00	0.006	4.00	\$ 370.00
0800198	ASA100-150-B-4.00	ASA100	1.50	0.006	4.00	\$ 375.00
0800199	ASA150-200-B-4.00	ASA150	2.00	0.006	4.00	\$ 415.00
0800200	ASA150-250-B-6.00	ASA150	2.50	0.008	6.00	\$ 440.00
0800201	ASA200-300-B-6.00	ASA200	3.00	0.008	6.00	\$ 545.00
0800202	ASA300-400-B-6.00	ASA300	4.00	0.010	6.00	\$ 695.00
0800203	ASA400-400-B-6.00	ASA400	4.00	0.010	6.00	\$ 715.00
0800204	ASA400-600-B-8.00	ASA400	6.00	0.012	8.00	\$ 815.00
0800205	ASA600-600-B-8.00	ASA600	6.00	0.012	8.00	\$ 1070.00

ISO-LF Bellows

Materials:

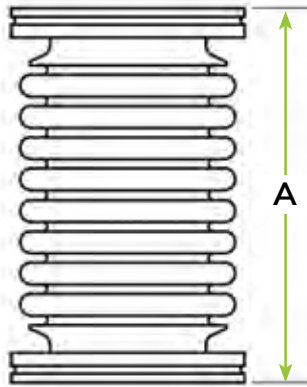
- Flanges: 304 stainless steel
- Flexible hose: 321 stainless steel

Product Notes:

- Corrects misaligned connections

Options: Call for price and delivery

- Larger sizes
- Custom lengths
- Custom flange combination



PART #	REFERENCE ID	HOSE I.D. (in)	WALL (in)	A (in)	B (in)	UNIT PRICE
0800069	LF63-250-B-6.0	2.5	0.006	6.00	4.50	\$270.00
0800070	LF80-300-B-6.0	3.0	0.008	6.00	4.50	\$310.00
0800071	LF100-400-B-6.0	4.0	0.008	6.00	4.50	\$370.00
0800072	LF160-600-B-8.0	6.0	0.010	8.00	5.70	\$550.00

ASA/ANSI Bellows - Fixed

Materials:

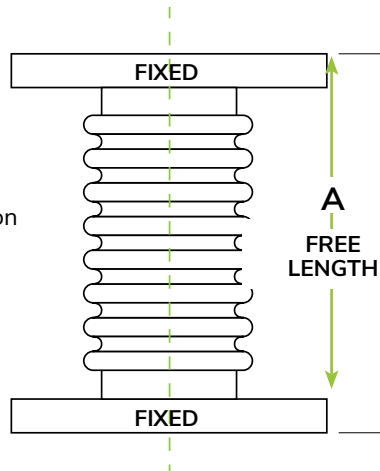
- Fixed Flanges: 304 stainless steel
- Flexible hose: 321 stainless steel formed bellows

Product Notes:

- Corrects misaligned connections
- Both flanges have a fixed bolt hole orientation

Options: Call for price and delivery

- Larger sizes
- Custom lengths
- O-ring groove available
- Custom flange combination
- Alternative materials: 316 stainless steel



PART #	REFERENCE ID	FLANGE TYPE	HOSE I.D. (in)	WALL (in)	A (in)	UNIT PRICE
0800182	ASA100XASA100-100-B-4.00	ASA100	1.00	0.006	4.00	\$300.00
0800183	ASA100XASA100-150-B-4.00	ASA100	1.50	0.006	4.00	\$305.00
0800184	ASA150XASA150-200-B-4.00	ASA150	2.00	0.006	4.00	\$320.00
0800186	ASA150XASA150-250-B-6.00	ASA150	2.50	0.006	6.00	\$345.00
0800187	ASA200XASA200-300-B-6.00	ASA200	3.00	0.008	6.00	\$385.00
0800188	ASA300XASA300-400-B-6.00	ASA300	4.00	0.008	6.00	\$520.00
0800189	ASA400XASA400-400-B-6.00	ASA400	4.00	0.008	6.00	\$540.00
0800190	ASA400XASA400-600-B-8.00	ASA400	6.00	0.010	8.00	\$640.00
0800191	ASA600XASA600-600-B-8.00	ASA 600	6.00	0.010	8.00	\$820.00

ISO-QF/LF Bellows

Materials:

- Flanges: 304 stainless steel
- Formed flexible hose: 321 stainless steel

Product Notes:

- Thin wall design provides maximum flexibility
- Medium wall design for price economy
- Corrects misaligned connections
- Provides vibration isolation

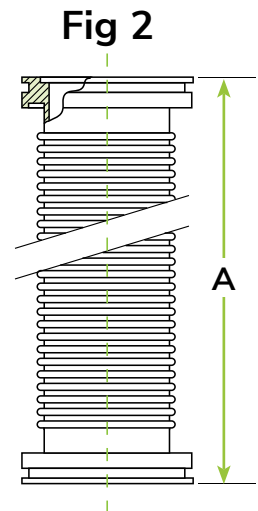
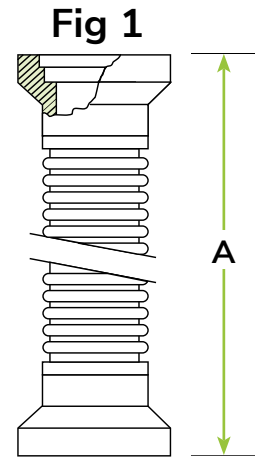
Options: Call for price and delivery

- Custom lengths
- Custom flange combination



ISO-QF/LF Bellows - Thin Wall

PART #	REFERENCE ID	FLANGES	DRAWING FIGURE	NOMINAL TUBE I.D. (in)	WALL (in)	A O.A.L (in)	UNIT PRICE
0800004	QF16-075-B-10.0	QF16	1	0.75	0.006	10	\$110.00
0800005	QF16-075-B-12.0	QF16	1	0.75	0.006	12	\$115.00
0800006	QF16-075-B-18.0	QF16	1	0.75	0.006	18	\$140.00
0800007	QF16-075-B-20.0	QF16	1	0.75	0.006	20	\$145.00
0800008	QF16-075-B-24.0	QF16	1	0.75	0.006	24	\$165.00
0800009	QF16-075-B-36.0	QF16	1	0.75	0.006	36	\$210.00
0800010	QF16-075-B-40.0	QF16	1	0.75	0.006	40	\$225.00
0800011	QF16-075-B-48.0	QF16	1	0.75	0.006	48	\$255.00
0800012	QF25-100-B-10.0	QF25	1	1.00	0.006	10	\$70.00
0800013	QF25-100-B-12.0	QF25	1	1.00	0.006	12	\$135.00
0800014	QF25-100-B-18.0	QF25	1	1.00	0.006	18	\$160.00
0800015	QF25-100-B-20.0	QF25	1	1.00	0.006	20	\$170.00
0800016	QF25-100-B-24.0	QF25	1	1.00	0.006	24	\$185.00
0800017	QF25-100-B-36.0	QF25	1	1.00	0.006	36	\$240.00
0800018	QF25-100-B-40.0	QF25	1	1.00	0.006	40	\$245.00
0800019	QF25-100-B-48.0	QF25	1	1.00	0.006	48	\$290.00
0800020	QF40-150-B-10.0	QF40	1	1.50	0.006	10	\$100.00
0800021	QF40-150-B-12.0	QF40	1	1.50	0.006	12	\$165.00
0800022	QF40-150-B-18.0	QF40	1	1.50	0.006	18	\$200.00
0800023	QF40-150-B-20.0	QF40	1	1.50	0.006	20	\$130.00
0800024	QF40-150-B-24.0	QF40	1	1.50	0.006	24	\$230.00
0800025	QF40-150-B-36.0	QF40	1	1.50	0.006	36	\$300.00
0800026	QF40-150-B-40.0	QF40	1	1.50	0.006	40	\$320.00
0800027	QF40-150-B-48.0	QF40	1	1.50	0.006	48	\$365.00
0800028	QF50-200-B-10.0	QF50	1	2.00	0.006	10	\$110.00
0800029	QF50-200-B-12.0	QF50	1	2.00	0.006	12	\$180.00
0800030	QF50-200-B-18.0	QF50	1	2.00	0.006	18	\$215.00
0800031	QF50-200-B-20.0	QF50	1	2.00	0.006	20	\$225.00
0800032	QF50-200-B-24.0	QF50	1	2.00	0.006	24	\$250.00
0800033	QF50-200-B-36.0	QF50	1	2.00	0.006	36	\$325.00
0800034	QF50-200-B-40.0	QF50	1	2.00	0.006	40	\$345.00
0800035	QF50-200-B-48.0	QF50	1	2.00	0.006	48	\$395.00



ISO-QF/LF Metal Hose - Medium Wall

PART #	REFERENCE ID	FLANGES	DRAWING FIGURE	NOMINAL TUBE I.D. (in)	WALL (in)	A O.A.L (in)	UNIT PRICE
0800036	QF16-075-MH-10.0	QF16	1	0.75	0.008	10	\$105.00
0800037	QF16-075-MH-12.0	QF16	1	0.75	0.008	12	\$110.00
0800038	QF16-075-MH-18.0	QF16	1	0.75	0.008	18	\$120.00
0800039	QF16-075-MH-20.0	QF16	1	0.75	0.008	20	\$120.00
0800040	QF16-075-MH-24.0	QF16	1	0.75	0.008	24	\$130.00
0800041	QF16-075-MH-36.0	QF16	1	0.75	0.008	36	\$150.00
0800042	QF16-075-MH-40.0	QF16	1	0.75	0.008	40	\$155.00
0800043	QF16-075-MH-48.0	QF16	1	0.75	0.008	48	\$165.00
0800045	QF25-100-MH-10.0	QF25	1	1.00	0.008	10	\$105.00
0800046	QF25-100-MH-12.0	QF25	1	1.00	0.008	12	\$110.00
0800047	QF25-100-MH-18.0	QF25	1	1.00	0.008	18	\$120.00
0800048	QF25-100-MH-20.0	QF25	1	1.00	0.008	20	\$125.00
0800049	QF25-100-MH-24.0	QF25	1	1.00	0.008	24	\$135.00
0800050	QF25-100-MH-36.0	QF25	1	1.00	0.008	36	\$155.00
0800051	QF25-100-MH-40.0	QF25	1	1.00	0.008	40	\$165.00
0800052	QF25-100-MH-48.0	QF25	1	1.00	0.008	48	\$180.00
0800053	QF40-150-MH-10.0	QF40	1	1.50	0.010	10	\$140.00
0800054	QF40-150-MH-12.0	QF40	1	1.50	0.010	12	\$150.00
0800055	QF40-150-MH-18.0	QF40	1	1.50	0.010	18	\$165.00
0800056	QF40-150-MH-20.0	QF40	1	1.50	0.010	20	\$175.00
0800057	QF40-150-MH-24.0	QF40	1	1.50	0.010	24	\$185.00
0800058	QF40-150-MH-36.0	QF40	1	1.50	0.010	36	\$220.00
0800059	QF40-150-MH-40.0	QF40	1	1.50	0.010	40	\$235.00
0800060	QF40-150-MH-48.0	QF40	1	1.50	0.010	48	\$260.00
0800061	QF50-200-MH-10.0	QF50	1	2.00	0.012	10	\$165.00
0800062	QF50-200-MH-12.0	QF50	1	2.00	0.012	12	\$170.00
0800063	QF50-200-MH-18.0	QF50	1	2.00	0.012	18	\$190.00
0800064	QF50-200-MH-20.0	QF50	1	2.00	0.012	20	\$200.00
0800065	QF50-200-MH-24.0	QF50	1	2.00	0.012	24	\$215.00
0800066	QF50-200-MH-36.0	QF50	1	2.00	0.012	36	\$255.00
0800067	QF50-200-MH-40.0	QF50	1	2.00	0.012	40	\$270.00
0800068	QF50-200-MH-48.0	QF50	1	2.00	0.012	48	\$300.00
0800080	LF63-250-MH-12.0	LF63	2	2.50	0.012	12	\$245.00
8082034	LF63-250-MH-18.0	LF63	2	2.50	0.012	18	\$275.00
0800240	LF63-250-MH-24.0	LF63	2	2.50	0.012	24	\$305.00
0800310	LF63-250-MH-36.0	LF63	2	2.50	0.012	36	\$365.00
8080208	LF63-250-MH-48.0	LF63	2	2.50	0.012	48	\$420.00
8450781	LF80-300-MH-12.0	LF80	2	3.00	0.016	12	CALL
0800327	LF80-300-MH-18.0	LF80	2	3.00	0.016	18	\$400.00
0800316	LF80-300-MH-24.0	LF80	2	3.00	0.016	24	\$430.00
8082035	LF80-300-MH-36.0	LF80	2	3.00	0.016	36	\$490.00
0800308	LF80-300-MH-48.0	LF80	2	3.00	0.016	48	\$555.00
8082033	LF100-400-MH-12.0	LF100	2	4.00	0.016	12	\$375.00
8082027	LF100-400-MH-18.0	LF100	2	4.00	0.016	18	\$410.00
0800307	LF100-400-MH-24.0	LF100	2	4.00	0.016	24	\$440.00
0800315	LF100-400-MH-36.0	LF100	2	4.00	0.016	36	\$505.00
0800249	LF100-400-MH-48.0	LF100	2	4.00	0.016	48	CALL



TECH TIP

Braided metal hose option provides protection for the medium wall metal hose from pressure, abrasion, impact and over-bending.



Fig 1

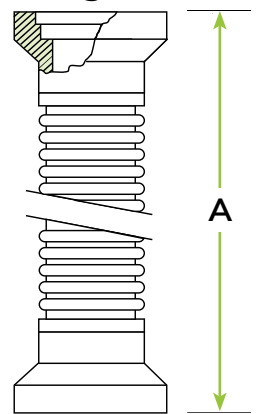
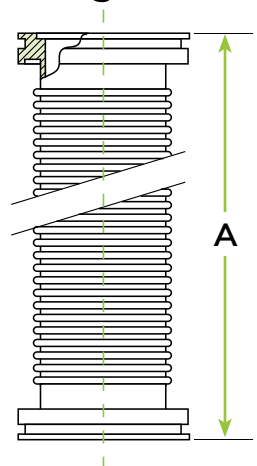


Fig 2



CF Flexible Bellows - Thin Wall

Materials:

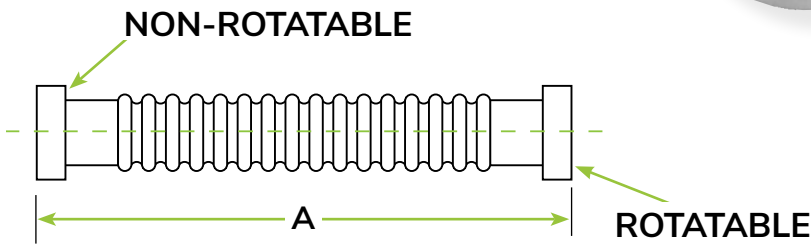
- Flanges: 304 stainless steel
- Formed flexible hose: 321 stainless steel

Product Notes:

- Thin wall design provides maximum flexibility
- Corrects misaligned connections
- Provides vibration isolation

Options: Call for price and delivery

- Custom lengths
- Custom flange combination



PART #	REFERENCE NUMBER	FLANGES	NOMINAL TUBE I.D. (in)	WALL (in)	A O.A.L (in)	UNIT PRICE
0800111	CF133-075-B-12.0	CF133	0.75	0.006	12	\$185.00
0800113	CF133-075-B-18.0	CF133	0.75	0.006	18	\$210.00
0800115	CF133-075-B-24.0	CF133	0.75	0.006	24	\$235.00
0800117	CF133-075-B-36.0	CF133	0.75	0.006	36	\$280.00
0800239	CF133-075-B-48.0	CF133	0.75	0.006	48	\$325.00
0800123	CF212-100-B-12.0	CF212	1.00	0.006	12	\$180.00
0800125	CF212-100-B-18.0	CF212	1.00	0.006	18	\$205.00
0800127	CF212-100-B-24.0	CF212	1.00	0.006	24	\$225.00
0800129	CF212-100-B-36.0	CF212	1.00	0.006	36	\$265.00
0800135	CF275-150-B-12.0	CF275	1.50	0.006	12	\$225.00
0800137	CF275-150-B-18.0	CF275	1.50	0.006	18	\$250.00
0800139	CF275-150-B-24.0	CF275	1.50	0.006	24	\$275.00
0800141	CF275-150-B-36.0	CF275	1.50	0.006	36	\$325.00
0800147	CF338-200-B-12.0	CF338	2.00	0.006	12	\$270.00
0800149	CF338-200-B-18.0	CF338	2.00	0.006	18	\$305.00
0800151	CF338-200-B-24.0	CF338	2.00	0.006	24	\$335.00
0800153	CF338-200-B-36.0	CF338	2.00	0.006	36	\$400.00
0800161	CF450-250-B-18.0	CF450	2.50	0.006	18	CALL

CF Flexible Metal Hose - Medium Wall

Materials:

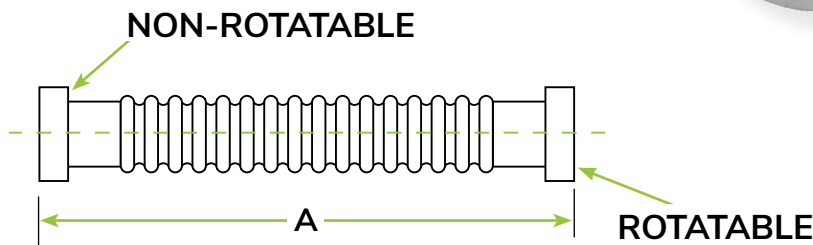
- Flanges: 304 stainless steel
- Formed Flexible Hose: 321 stainless steel

Options: Call for price and delivery

- Custom lengths
- Custom flange combination
- Braided metal hose

Product Notes:

- Medium wall design for price economy
- Corrects misaligned connections
- Provides vibration isolation



TECH TIP



Braided metal hose option provides protection for the medium wall metal hose from pressure, abrasion, impact and over-bending.



PART #	REFERENCE ID	FLANGES	NOMINAL TUBE I.D. (in)	WALL (in)	A O.A.L (in)	UNIT PRICE
0800241	CF133-075-MH-12.0	CF133	0.75	0.008	12	\$135.00
0800238	CF133-075-MH-18.0	CF133	0.75	0.008	18	\$140.00
0800324	CF133-075-MH-24.0	CF133	0.75	0.008	24	\$145.00
8080372	CF133-075-MH-36.0	CF133	0.75	0.008	36	\$145.00
0800242	CF133-075-MH-48.0	CF133	0.75	0.008	48	\$175.00
0800237	CF212-100-MH-12.0	CF212	1.00	0.008	12	\$150.00
0800230	CF212-100-MH-48.0	CF212	1.00	0.008	48	\$205.00
0800312	CF275-150-MH-12.0	CF275	1.50	0.010	12	\$210.00
0800313	CF275-150-MH-18.0	CF275	1.50	0.010	18	\$200.00
0800309	CF275-150-MH-24.0	CF275	1.50	0.010	24	\$215.00
0800314	CF275-150-MH-36.0	CF275	1.50	0.010	36	\$240.00
0800318	CF275-150-MH-48.0	CF275	1.50	0.010	48	\$270.00
0800244	CF450-250-MH-12.0	CF450	2.50	0.012	12	\$275.00
0800243	CF450-250-MH-18.0	CF450	2.50	0.012	18	\$300.00
0800245	CF450-250-MH-24.0	CF450	2.50	0.012	24	\$345.00
0800233	CF462-300-MH-12.0	CF462	3.00	0.016	12	\$385.00
0800232	CF462-300-MH-18.0	CF462	3.00	0.016	18	\$410.00
0800234	CF600-400-MH-12.0	CF600	4.00	0.016	12	\$455.00
0800215	CF600-400-MH-18.0	CF600	4.00	0.016	18	\$480.00
0800216	CF600-400-MH-24.0	CF600	4.00	0.016	24	\$510.00
0800403	CF600-400-MH-36.0	CF600	4.00	0.016	36	\$570.00
0800404	CF600-400-MH-48.0	CF600	4.00	0.016	48	\$625.00

Weldable End Flexible Bellows - Thin Wall

Materials:

- Weldable tube ends: 304 stainless steel
- Formed flexible hose: 321 stainless steel

Product Notes:

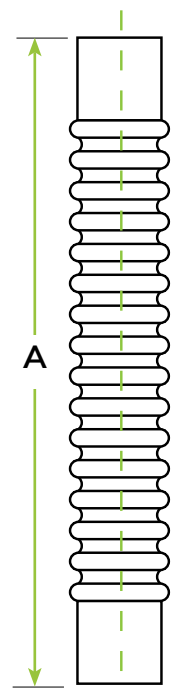
- Thin wall design provides maximum flexibility
- Corrects misaligned connections
- Provides vibration isolation

Options: Call for price and delivery

- Custom lengths
- Custom flange combination



PART #	REFERENCE ID	NOMINAL TUBE I.D. (in)	WALL (in)	A O.A.L (in)	UNIT PRICE
0802000	TE-075-B-12.0	0.75	0.006	12	\$115.00
0802001	TE-075-B-18.0	0.75	0.006	18	\$140.00
0802002	TE-075-B-24.0	0.75	0.006	24	\$165.00
0802003	TE-075-B-36.0	0.75	0.006	36	\$210.00
0802004	TE-075-B-48.0	0.75	0.006	48	\$260.00
0802005	TE-100-B-11.5	1.00	0.006	12	\$125.00
0802006	TE-100-B-18.0	1.00	0.006	18	\$150.00
0802007	TE-100-B-24.0	1.00	0.006	24	\$175.00
0802008	TE-100-B-36.0	1.00	0.006	36	\$220.00
0802009	TE-100-B-48.0	1.00	0.006	48	\$270.00
0802012	TE-150-B-24.0	1.50	0.006	24	\$185.00
0802013	TE-150-B-36.0	1.50	0.006	36	\$235.00
0802014	TE-150-B-48.0	1.50	0.006	48	\$285.00
0802015	TE-200-B-12.0	2.00	0.006	12	\$145.00
0802016	TE-200-B-18.0	2.00	0.006	18	\$175.00
0802017	TE-200-B-24.0	2.00	0.006	24	\$210.00
0802018	TE-200-B-36.0	2.00	0.006	36	\$270.00
0802019	TE-200-B-48.0	2.00	0.006	48	\$335.00



8 Weldable End Flexible Bellows

Weldable End Flexible Metal Hose - Medium Wall

Materials:

- Weldable Tube Ends: 304 stainless steel
- Formed Flexible Hose: 321 stainless steel

Product Notes:

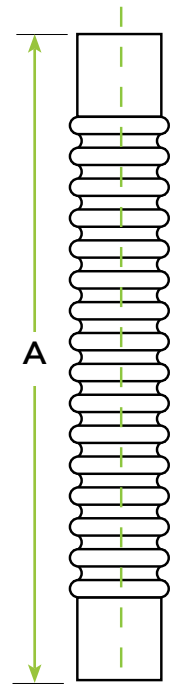
- Medium wall design for price economy
- Corrects misaligned connections
- Provides vibration isolation

Options: Call for price and delivery

- Custom Lengths
- Custom Flange Combination
- Braided Metal Hose



PART #	REFERENCE ID	NOMINAL TUBE I.D. (in)	WALL (in)	A O.A.L (in)	UNIT PRICE
0801072	TE-075-MH-12.0	0.75	0.008	12	\$91.00
8088013	TE-075-MH-18.0	0.75	0.008	18	\$100.00
0800501	TE-075-MH-24.0	0.75	0.008	24	\$110.00
8080365	TE-075-MH-36.0	0.75	0.008	36	\$245.00
0800503	TE-075-MH-48.0	0.75	0.008	48	\$140.00
0800505	TE-100-MH-12.0	1.00	0.008	12	\$99.00
8081072	TE-100-MH-18.0	1.00	0.009	18	CALL
0801104	TE-100-MH-24.0	1.00	0.009	24	\$120.00
8081074	TE-100-MH-36.0	1.00	0.009	36	CALL
0800509	TE-150-MH-12.0	1.50	0.010	12	\$110.00
0800510	TE-150-MH-18.0	1.50	0.010	18	\$120.00
0800511	TE-150-MH-24.0	1.50	0.010	24	\$135.00
0800512	TE-150-MH-36.0	1.50	0.010	36	\$160.00
0801074	TE-150-MH-48.0	1.50	0.010	48	\$190.00
0801050	TE-250-MH-12.0	2.50	0.012	12	\$195.00
0801111	TE-250-MH-18.0	2.50	0.012	18	\$225.00
0801109	TE-250-MH-24.0	2.50	0.012	24	CALL
0801113	TE-250-MH-36.0	2.50	0.012	36	\$315.00
0801096	TE-250-MH-48.0	2.50	0.012	48	\$375.00
0801087	TE-300-MH-12.0	3.00	0.016	12	\$205.00
0801115	TE-300-MH-18.0	3.00	0.016	18	\$230.00
0801116	TE-300-MH-24.0	3.00	0.016	24	CALL
0801084	TE-300-MH-36.0	3.00	0.016	36	\$305.00
0801117	TE-300-MH-48.0	3.00	0.016	48	\$355.00
8083062	TE-400-MH-12.0	4.00	0.016	12	\$225.00
0801095	TE-400-MH-18.0	4.00	0.016	18	\$255.00
0801119	TE-400-MH-24.0	4.00	0.016	24	\$285.00
0801120	TE-400-MH-36.0	4.00	0.016	36	\$340.00
8080268	TE-400-MH-48.0	4.00	0.016	48	\$400.00



TECH TIP

Braided metal hose option provides protection for the medium wall metal hose from pressure, abrasion, impact and over-bending.



Weldable End Flexible Metal Hose

QF Flexible PVC Hose

Materials:

- PVC hose: clear, wire reinforced
- Flanges: 304 stainless steel
- Temperature range: min. 23° F, max. 150° F

Product Notes:

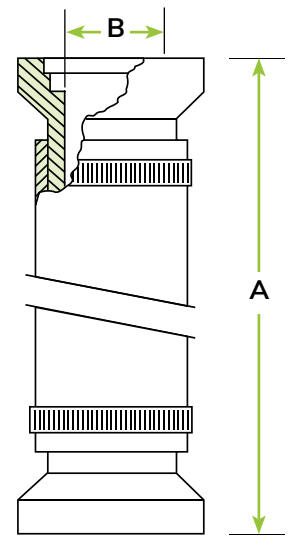
- Hose clamp fastens flange to PVC hose
- Ready to use: helium leak checked
- Good for exhaust lines

Options: Call for price and delivery

- Custom lengths



PART #	REFERENCE ID	A (in)	B (in)	MAX. PSI	UNIT PRICE
4000394	QF10-050-PVC-20.0	20	0.50	130	\$63.00
4000395	QF10-050-PVC-40.0	40	0.50	130	\$75.00
4000396	QF16-050-PVC-20.0	20	0.50	130	\$73.00
4000397	QF16-050-PVC-40.0	40	0.50	130	\$80.00
4000398	QF16-075-PVC-20.0	20	0.75	100	\$73.00
4000399	QF16-075-PVC-40.0	40	0.75	100	\$80.00
4000400	QF25-100-PVC-20.0	20	1.00	70	\$82.00
4000401	QF25-100-PVC-40.0	40	1.00	70	\$94.00
4000402	QF40-150-PVC-20.0	20	1.50	50	\$99.00
4000403	QF40-150-PVC-40.0	40	1.50	50	\$130.00
4000404	QF50-200-PVC-20.0	20	2.00	50	\$140.00
4000405	QF50-200-PVC-40.0	40	2.00	50	\$165.00
4000548	QF50-200-PVC-120.0	120	2.00	50	\$250.00



8 Flexible PVC Hose

Wire Reinforced Flexible PVC Hose

Materials:

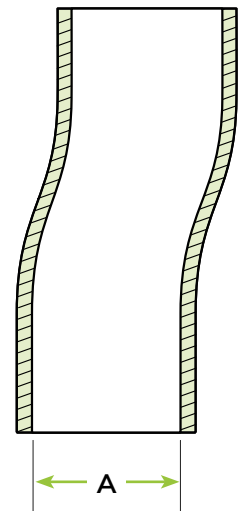
- Spiral steel wire reinforced PVC tubing
- Made from FDA approved ingredients
- Kink and crush resistant
- Handles pressure and full vacuum (29.9 in./Hg.) applications
- Clear, smooth surfaces provide outstanding visual flow characteristics
- Lightweight, tough, corrosion and abrasion resistant
- Temperature range: min. 23° F, max. 150° F
- Length is cut to order

Product Notes:

Used to transport various chemicals in areas with tight turns and sharp bends. Its bend radius is approximately four times the I.D.

Excellent for exhaust lines, Chemical Transfer, Conduit, Coolant Lines, Environmental Suit Air Feed, Floor Cleaning Equipment, Food & Beverage Lines, Material Handling, Shop Air Supply, Spray Systems, Vacuum Lines, Water Feeds and more.

PART #	REFERENCE ID	HOSE CLAMP PART NUMBER	A (in)	OD (in)	WALL	WORKING PSI (@ 70°F)	UNIT PRICE
0701245	025-PVC	025-HC	0.25	.453	0.102	140	\$3.00/ft
0701250	050-PVC	050-HC	0.50	.748	0.124	140	\$4.00/ft
0701255	075-PVC	075-HC	0.75	1.024	0.137	100	\$5.00/ft
0701260	100-PVC	100-HC	1.00	1.319	0.160	85	\$6.50/ft
0701265	150-PVC	150-HC	1.50	1.909	0.205	85	\$12.00/ft
0701270	200-PVC	200-HC	2.00	2.382	0.191	70	\$14.00/ft



Hose Adapter to QF - Aluminum

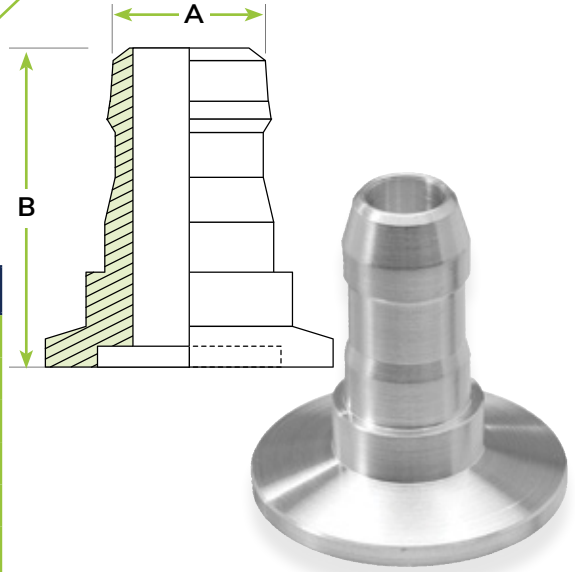
Materials:

- 2011 aluminum

Product Notes:

- Adapts from rubber or PVC vacuum hose to ISO-QF flanges
- Each kits adapts two sizes

PART #	REFERENCE ID	HOSE I.D. (in)	A (in)	B (in)	UNIT PRICE
4000256	QF10-50/63-H	0.50 or 0.63	0.63	1.63	\$10.50
4000257	QF16-50/63-H	0.50 or 0.63	0.63	1.63	\$10.50
4000258	QF16-63/75-H	0.63 or 0.75	0.75	1.63	\$10.50
4000259	QF25-50/63-H	0.50 or 0.63	0.63	1.63	\$17.00
4000261	QF25-75/88-H	0.75 or 0.88	0.88	1.73	\$13.00
4000262	QF40-150/163-H	1.50 or 1.63	1.63	2.17	\$18.00
4000263	QF50-150/163-H	1.50 or 1.63	1.63	2.17	\$24.00



Hose Adapter to QF - Stainless Steel

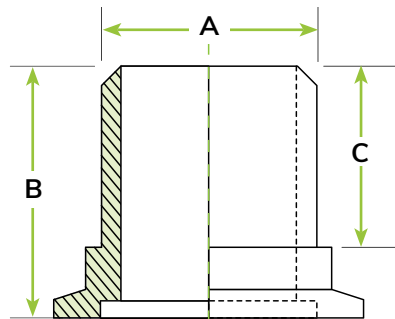
Materials:

- 304 stainless steel

Product Notes:

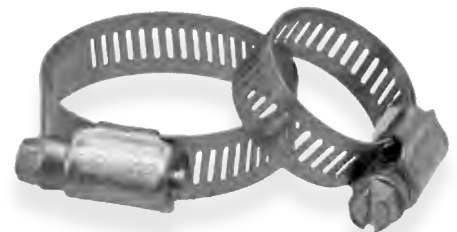
- Adapts from rubber or PVC vacuum hose to ISO-QF flanges

PART #	REFERENCE ID	HOSE I.D. (in)	A (in)	B (in)	C (in)	UNIT PRICE
4000264	QF10-050-SH	0.50	0.50	1.26	0.79	\$16.00
4000265	QF16-050-SH	0.50	0.50	1.26	0.79	\$16.00
4000266	QF16-075-SH	0.75	0.75	1.26	0.79	\$16.00
4000267	QF25-100-SH	1.00	1.00	1.50	1.02	\$21.00
4000268	QF40-150-SH	1.50	1.50	1.97	1.50	\$25.00
4000269	QF50-200-SH	2.00	2.00	2.17	1.61	\$32.00

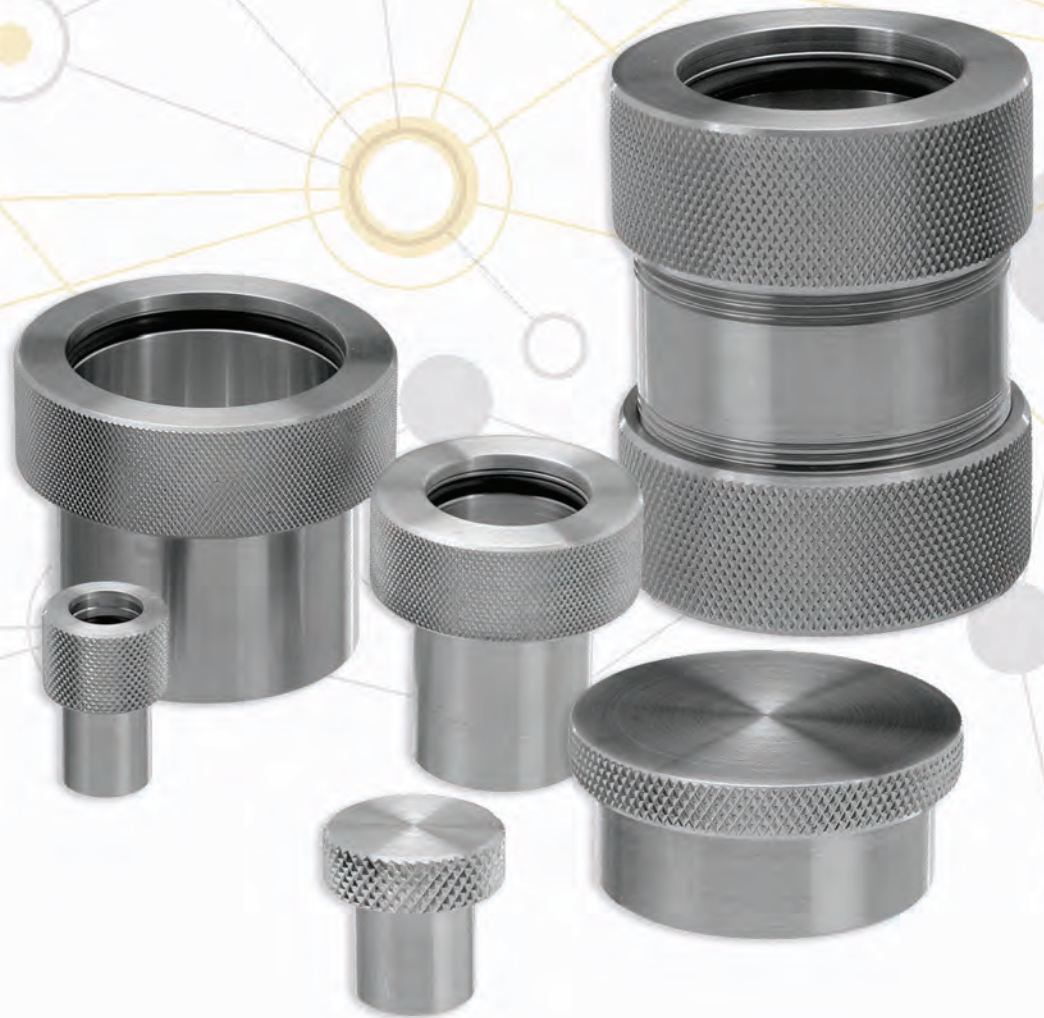


Hose Clamps

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
4000520	050-HC	PVC Hose Clamp for 1/2 in. tubing	\$3.00
4000521	075-HC	PVC Hose Clamp for 3/4 in. tubing	\$3.00
4000522	100-HC	PVC Hose Clamp for 1 in. tubing	\$3.00
4000523	150-HC	PVC Hose Clamp for 1 1/2 in. tubing	\$4.00
4000524	200-HC	PVC Hose Clamp for 2 in. tubing	\$4.00



Quick Disconnect Fittings



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Quick Disconnect Fittings - Thin Wall.....	9.04
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Quick Disconnect Replacement O-Ring	9.09



Quick-Disconnect FITTINGS



Overview

Quick disconnects are a fast and easy way to make and break a vacuum seal onto metal or glass tubing. These useful fittings can be welded, brazed, soldered or flange mounted onto your system, chamber or flange. They are commonly used to mount vacuum measurement gauges, feedthroughs and other vacuum accessories.

ANCORP quick disconnects compress an o-ring onto the outer diameter of metal or glass tubing as the outer nut is hand tightened. Sizes for quick disconnect fittings are based on the outer diameter of the tube that will be inserted into the assembly.

All fittings offered by **ANCORP** are manufactured on state-of-the-art CNC (computer controlled) lathes to ensure consistency with dimensional tolerances, and extremely fine surface finishes. Water soluble, non-sulfur based coolants are used during the manufacturing process. The fittings are cleaned in an ultrasonic de-ionized water based cleaning system and vacuum packaged free from visible particulates and oils, ready for immediate use in any vacuum application.

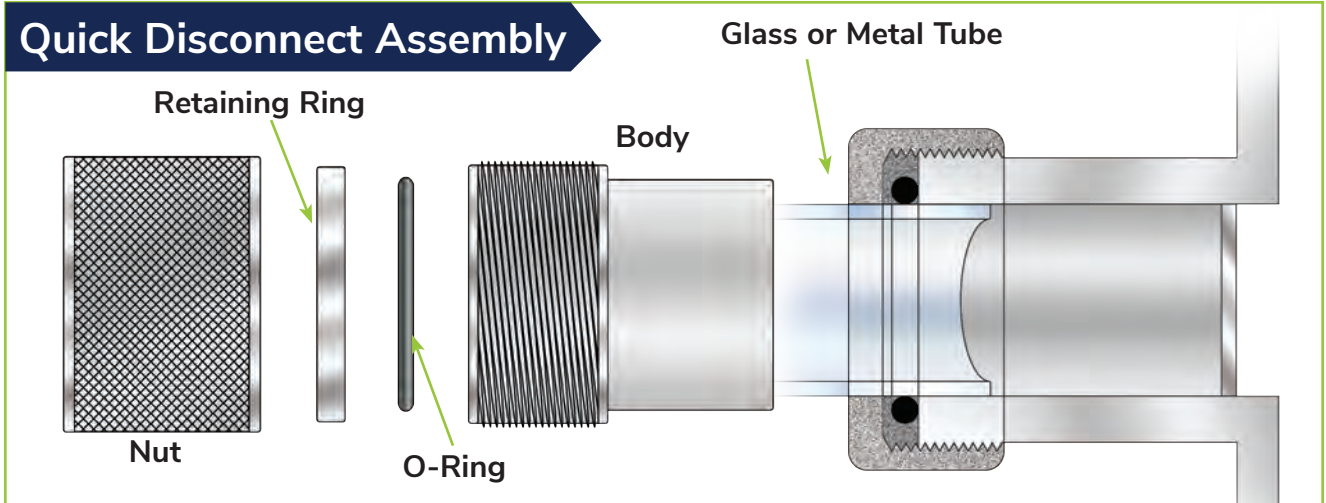
Specifications:

- Vacuum rated to: HV design 1×10^{-8} Torr.
- Leak rating: $< 1 \times 10^{-9}$ std. cc/s helium
- Materials:
 - Bodies, rings: 304 stainless steel
 - Nuts: 303 stainless steel
- Accept metal and glass tubing with outer diameter 1/16 inch up to 2 inch
- Larger sizes available upon request

TEMPERATURE LIMITS			
O-ring MATERIAL	LOW	SUSTAINED HIGH	INTERMITTENT USE
Viton®	-26 °C	150 °C	205 °C
Buna	-20 °C	80 °C	100 °C

Features:

- Quickly make and break vacuum seals
- Reusable seals
- Adapters to other flange systems available
- Interchangeable with other quick disconnect style fittings



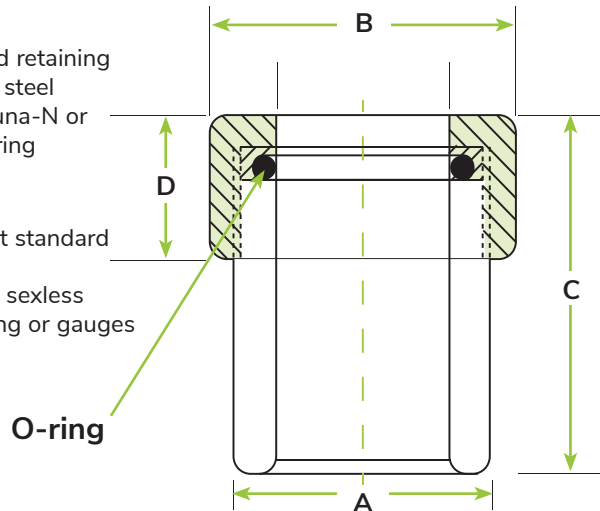
Quick Disconnect Fittings - Thin Wall

Materials:

- Body, plug, nut and retaining ring: 304 stainless steel
- Seals: Standard Buna-N or Custom Viton® O-ring

Product Features:

- Designed to accept standard inch tubing O.D.'s
- Infinitely rotatable, sexless connection to tubing or gauges
- Reusable seals



ORDERING NOTE:

- To connect thin wall quick disconnects to your system utilize welding for stainless steel.
- Use a thick wall quick disconnect if you desire to solder the assembly to your system.

Stainless Steel

PART #	REFERENCE ID	ACCEPTS TUBE O.D. (in)	A (in)	B (in)	C (in)	D (in)	UNIT PRICE
1000103	18-QDTN-1.32	0.188	0.375	0.625	1.317	0.625	\$34.00
1000104	25-QDTN-1.32	0.250	0.375	0.625	1.317	0.625	\$34.00
1000106	31-QDTN-1.32	0.312	0.500	0.875	1.317	0.625	\$37.00
1000108	38-QDTN-1.32	0.375	0.500	0.875	1.317	0.625	\$37.00
1000110	50-QDTN-1.32	0.500	0.625	0.875	1.317	0.625	\$40.00
1000112	62-QDTN-1.51	0.625	0.750	1.188	1.500	0.750	\$43.00
1000114	75-QDTN-1.63	0.750	0.875	1.375	1.625	0.750	\$45.00
1000116	87-QDTN-1.63	0.875	1.00	1.375	1.625	0.750	\$51.00
1000118	100-QDTN-1.88	1.00	1.125	1.625	1.875	0.750	\$57.00
1000120	112-QDTN-1.88	1.125	1.250	1.875	1.875	0.750	\$74.00
1000122	125-QDTN-2.00	1.250	1.500	1.875	2.000	0.750	\$90.00
1000124	138-QDTN-2.13	1.375	1.625	2.000	2.125	0.875	\$123.00
1000126	150-QDTN-2.25	1.50	1.750	2.250	2.250	0.875	\$138.00
1000128	162-QDTN-2.25	1.625	1.875	2.375	2.250	0.875	\$148.00
1000130	200-QDTN-2.30	2.00	2.250	2.750	2.250	0.875	\$159.00

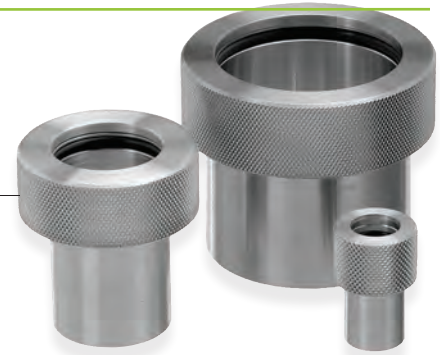
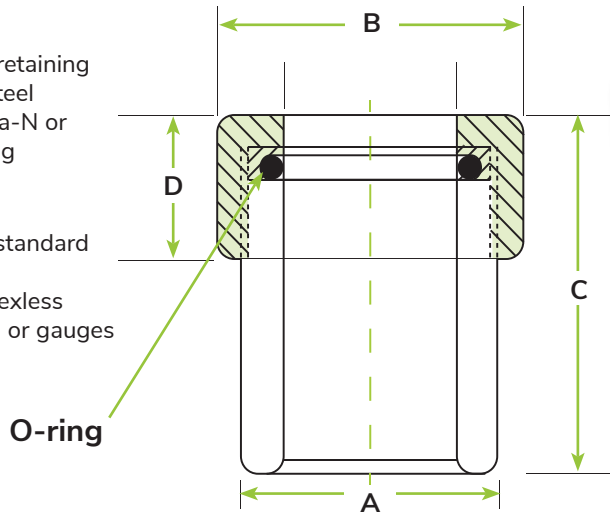
Quick Disconnect Fittings - Thick Wall

Materials:

- Body, plug, nut and retaining ring: 304 stainless steel
- Seals: Standard Buna-N or Custom Viton® O-ring

Product Features:

- Designed to accept standard inch tubing O.D.'s
- Infinitely rotatable, sexless connection to tubing or gauges
- Reusable seals



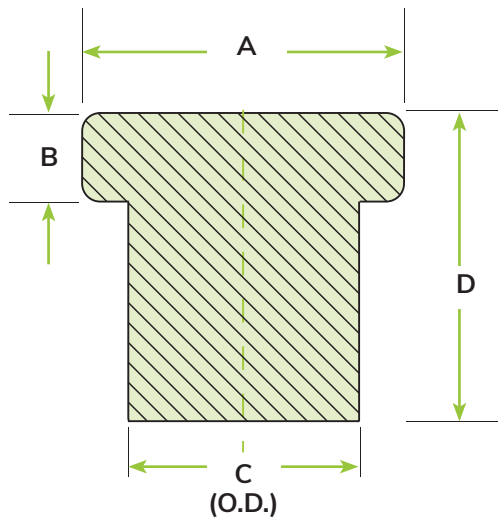
ORDERING NOTE:

- To connect thin wall quick disconnects to your system utilize welding for stainless steel.
- Use a thick wall quick disconnect if you desire to solder the assembly to your system.

Stainless Steel

PART #	REFERENCE ID	ACCEPTS TUBE O.D. (in)	A (in)	B (in)	C (in)	D (in)	UNIT PRICE
1000101	06-QDTK-1.32	0.063	0.375	0.500	1.317	0.625	\$34.00
1000102	12-QDTK-1.32	0.125	0.375	0.500	1.317	0.625	\$34.00
1000105	25-QDTK-1.32	0.250	0.500	0.625	1.317	0.625	\$34.00
1000109	38-QDTK-1.32	0.375	0.625	0.875	1.317	0.625	\$37.00
1000111	50-QDTK-1.32	0.500	0.750	0.875	1.317	0.625	\$40.00
1000113	62-QDTK-1.50	0.625	0.875	1.188	1.505	0.750	\$43.00
1000115	75-QDTK-1.63	0.750	1.125	1.375	1.630	0.750	\$45.00
1000117	87-QDTK-1.63	0.875	1.250	1.375	1.630	0.750	\$51.00
1000119	100-QDTK-1.88	1.000	1.375	1.625	1.880	0.750	\$57.00
1000121	112-QDTK-1.88	1.125	1.500	1.875	1.880	0.750	\$74.00
1000123	125-QDTK-2.00	1.250	1.688	1.875	2.005	0.750	\$90.00
1000125	138-QDTK-2.13	1.375	1.813	2.000	2.130	0.875	\$123.00
1000127	150-QDTK-2.25	1.500	2.000	2.250	2.255	0.875	\$138.00
1000129	162-QDTK-2.25	1.625	2.125	2.375	2.255	0.875	\$148.00
1000131	200-QDTK-2.25	2.000	2.500	2.750	2.255	0.875	\$159.00

Blank Plug



Materials:

- 304 stainless steel

Product Features:

- Close unused quick disconnect ports
- Custom modify for your application

Stainless Steel

PART #	REFERENCE ID	A (in)	B (in)	C (in)	D (in)	UNIT PRICE
1000301	06-QDBP-0.75	0.375	0.250	0.063	0.750	\$16.00
1000302	12-QDBP-0.75	0.375	0.250	0.125	0.750	\$16.00
1000303	18-QDBP-0.75	0.375	0.250	0.188	0.750	\$16.00
1000304	25-QDBP-0.75	0.500	0.250	0.250	0.750	\$16.00
1000305	31-QDBP-0.75	0.625	0.250	0.313	0.750	\$16.00
1000306	38-QDBP-0.75	0.625	0.250	0.375	0.750	\$16.00
1000307	50-QDBP-0.75	0.750	0.250	0.500	0.750	\$16.00
1000308	62-QDBP-0.75	0.875	0.250	0.625	0.750	\$20.00
1000309	75-QDBP-0.75	1.000	0.250	0.750	0.750	\$20.00
1000310	87-QDBP-0.75	1.125	0.250	0.875	0.750	\$20.00
1000311	100-QDBP-0.75	1.250	0.250	1.000	0.750	\$20.00
1000312	112-QDBP-0.75	1.375	0.250	1.125	0.750	\$28.00
1000313	125-QDBP-0.75	1.500	0.250	1.250	0.750	\$28.00
1000314	138-QDBP-0.75	1.625	0.250	1.375	0.750	\$28.00
1000315	150-QDBP-0.75	1.750	0.250	1.500	0.750	\$40.00
1000316	162-QDBP-0.75	1.875	0.250	1.625	0.750	\$40.00
1000317	200-QDBP-0.75	2.250	0.250	2.000	0.750	\$43.00

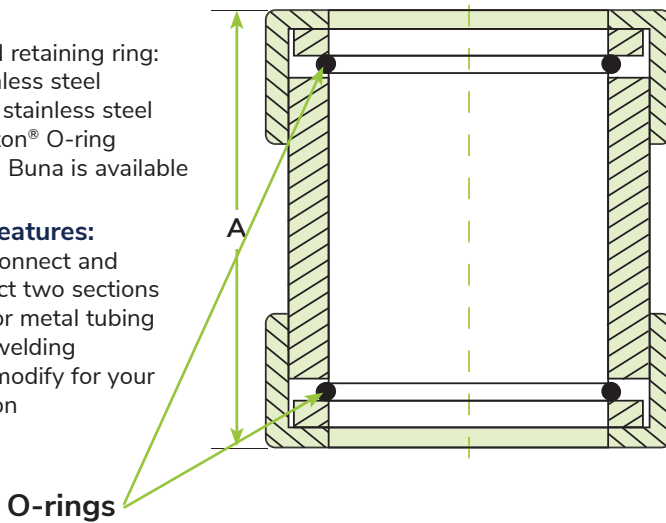
Quick Disconnect Unions

Materials:

- Body and retaining ring: 304 stainless steel
- Nut: 303 stainless steel
- Seals: Viton® O-ring standard, Buna is available

Product Features:

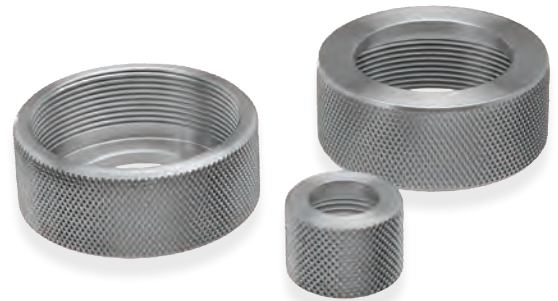
- Quickly connect and disconnect two sections of glass or metal tubing without welding
- Custom modify for your application



PART #	REFERENCE ID	ACCEPTS TUBE O.D. (in)	A (in)	UNIT PRICE
1000732	25-QDU-1.60	0.25	1.6	CALL
1000733	50-QDU-1.57	0.50	1.56	CALL
1000735	75-QDU-1.89	0.75	1.88	CALL
1000737	100-QDU-2.14	1.00	2.13	CALL
1000738	112-QDU-2.00	1.125	2.13	CALL
1000740	125-QDU-2.13	1.25	2.25	CALL
1000741	150-QDU-2.51	1.50	2.50	CALL
1000744	200-QDU-2.51	2.00	2.50	CALL

Quick Disconnect Replacement Nut

PART #	REFERENCE ID	THREAD SIZE	COUPLING SIZE	UNIT PRICE
1010101	06-QDNUT	0.375-20	06	\$17.00
1010102	12-QDNUT	0.375-20	12	\$17.00
1010103	18-QDNUT	0.50-20	18	\$17.00
1010104	25-QDNUT	0.50-20	25	\$17.00
1010105	31-QDNUT	1.0625-20	31	\$19.00
1010106	38-QDNUT	1.0625-20	38	\$19.00
1010107	50-QDNUT	0.75-20	50	\$20.00
1010108	62-QDNUT	1-20	62	\$22.00
1010109	75-QDNUT	1.0625-20	75	\$23.00
1010110	87-QDNUT	1.25-20	87	\$26.00
1010111	100-QDNUT	1.375-20	100	\$29.00
1010112	112-QDNUT	1.625-20	112	\$37.00
1010113	125-QDNUT	1.6875-20	125	\$45.00
1010114	138-QDNUT	1.8125-20	138	\$60.00
1010115	150-QDNUT	2-20	150	\$68.00
1010116	162-QDNUT	2.125-20	162	\$74.00
1010117	200-QDNUT	2.50-20	200	\$79.00



Materials:

- 303 stainless steel

Product Features:

- Replace damaged or lost parts



Quick Disconnect Replacement Retaining Ring

PART #	REFERENCE ID	COUPLING SIZE	UNIT PRICE
1010201	06-QDRR	06	\$10.00
1010202	12-QDRR	12	\$10.00
1010203	18-QDRR	18	\$10.00
1010204	25-QDRR	25	\$10.00
1010205	31-QDRR	31	\$10.00
1010206	38-QDRR	38	\$10.00
1010207	50-QDRR	50	\$11.00
1010208	62-QDRR	62	\$11.00
1010209	75-QDRR	75	\$12.00
1010210	87-QDRR	87	\$13.00
1010211	100-QDRR	100	\$15.00
1010212	112-QDRR	112	\$19.00
1010213	125-QDRR	125	\$23.00
1010214	138-QDRR	138	\$30.00
1010215	150-QDRR	150	\$34.00
1010216	162-QDRR	162	\$37.00
1010217	200-QDRR	200	\$40.00



Materials:

- 304 stainless steel

Product Features:

- Aligns o-ring for consistent sealing
- Replace damaged or lost parts

Quick Disconnect Replacement O-Ring

Materials:

- Viton® or Buna



TEMPERATURE LIMITS

O-ring MATERIAL	LOW	SUSTAINED HIGH	INTERMITTENT USE
Viton®	-26 °C	150 °C	205 °C
Buna	-20 °C	80 °C	100 °C

Viton®

PART #	REFERENCE ID	COUPLING SIZE	UNIT PRICE
0600003	2-003-OV	06	\$1.50
0600006	2-006-OV	12	\$1.50
0600008	2-008-OV	18	\$1.50
0600010	2-010-OV	25	\$1.50
0600011	2-011-OV	31	\$1.50
0600012	2-012-OV	38	\$1.50
0600014	2-014-OV	50	\$1.50
0600114	2-114-OV	62	\$2.50
0600116	2-116-OV	75	\$2.50
0600118	2-118-OV	87	\$2.50
0600120	2-120-OV	100	\$2.50
0600216	2-216-OV	112	\$4.50
0600218	2-218-OV	125	\$4.50
0600220	2-220-OV	138	\$4.50
0600222	2-222-OV	150	\$4.50
0600223	2-223-OV	162	\$4.50
0600226	2-226-OV	200	\$4.50

Buna-N

PART #	REFERENCE ID	COUPLING SIZE	UNIT PRICE
0601003	2-003-OB	06	\$0.55
0601006	2-006-OB	12	\$1.50
0601008	2-008-OB	18	\$0.55
0601010	2-010-OB	25	\$0.55
0601011	2-011-OB	31	\$0.55
0601012	2-012-OB	38	\$1.50
0601014	2-014-OB	50	\$0.55
0601114	2-114-OB	62	\$2.50
0601116	2-116-OB	75	\$1.50
0601118	2-118-OB	87	\$1.50
0601120	2-120-OB	100	\$1.50
0601216	2-216-OB	112	\$2.50
0601218	2-218-OB	125	\$2.50
0601220	2-220-OB	138	\$2.50
0601222	2-222-OB	150	\$2.50
0601223	2-223-OB	162	\$2.50
0601226	2-226-OB	200	\$2.50



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Weldable Components



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Weldable COMPONENTS INTRODUCTION



Overview

ANCORP weldable components provide an extensive array of options for the assembly of your pumping lines, exhaust lines or custom vacuum components. **ANCORP**'s weldable component product line includes tubing, conical reducers, elbows, tees, crosses, end caps and ball socket fittings. These components come in multiple sizes, lengths and designs to offer you the greatest flexibility in your system design while offering you the cost benefit of specifying standard product.

Tubing sizes are specified by their outer diameter measured in inches. The inner diameter is calculated by taking the outer diameter and subtracting 2 times the wall thickness. This measurement is approximate as tubing has no official specifications regarding tolerances for concentricity, ovality or parallelism.

All **ANCORP** vacuum components are shipped clean and packaged to arrive ready for high vacuum service.

Specifications:

- Sizes: 1/2 in. up to 10 in. outer diameter tubing
- Vacuum Range: $< 1 \times 10^{-9}$ std. cc/s helium
- Materials:
 - Standard: 304 stainless steel
 - Optional: 6061 aluminum
- Temperature range: -200°C to 450°C

Features:

- Pulled ports optimize vacuum performance
- Full penetration welds for maximum cleanliness and crevice free weld joints
- Customizable with any combination of **ANCORP** vacuum flanges
- Shipped clean and packaged for vacuum service

Tubing - Stainless Steel

Materials:

- Standard: 304 stainless steel
- Alternative: 6061 aluminum
(Call for price and delivery)

Product Notes:

- Butt weld
- Designed to fit standard inch tubing O.D.'s
- Custom cut to your specified length
- Cleaned for vacuum use

Options: Call for price and delivery

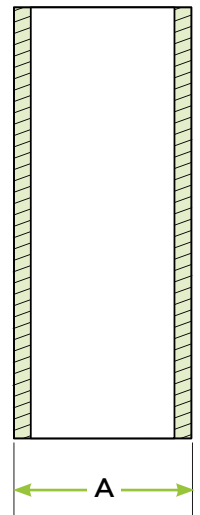
- Custom flange combinations



PART #	REFERENCE ID	WALL THICKNESS (in)	TUBE O.D. A (in)	UNIT PRICE
0705110	050-304T-065	0.065	0.50	\$0.55/in.
0705115	075-304T-065	0.065	0.75	\$0.55/in.
0705120	100-304T-065	0.065	1.00	\$0.95/in.
0705125	125-304T-065	0.065	1.25	\$1.40/in.
0705130	150-304T-065	0.065	1.50	\$1.20/in.
0705135	200-304T-065	0.065	1.63	\$1.65/in.
0705140	250-304T-065	0.065	1.75	\$1.65/in.
0705145	300-304T-065	0.065	2.00	\$2.35/in.
0705150	400-304T-083	0.083	2.50	\$4.00/in.
0705155	600-304T-083	0.083	3.00	\$4.95/in.
0705160	800-304T-120	0.120	4.00	\$11.65/in.
0705165	1000-304T-120	0.120	5.00	\$20.00/in.
0705170	1200-304T-120	0.120	6.00	\$30.00/in.

The welding of raw tubing to a flange should be done by a welder experienced in welding for vacuum applications.

To ensure a proper fit and alignment, additional machining may be necessary.



Ball Socket

Materials:

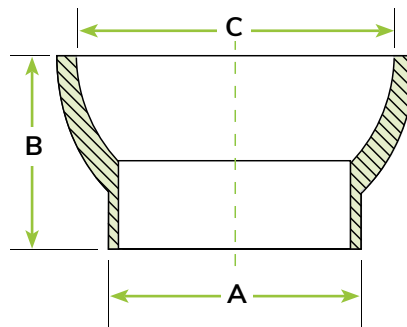
- Standard: 304 stainless steel

Product Notes:

- Butt weld
- Designed to fit standard inch tubing O.D.'s

Options: Call for price and delivery

- Custom lengths
- Custom Flange Connections



PART #	REFERENCE ID	TUBE O.D. A (in)	LENGTH B (in)	SOCKET I.D. C (in)	UNIT PRICE
0700125	50/30-150-WBS-2.00	1.50	2.00	1.995	\$125.00
0700130	75/50-200-WBS-2.52	2.00	2.52	3.00	\$145.00
0700135	102/75-300-WBS-2.00	3.00	2.00	3.98	\$180.00

Ball Socket - Grooved

Materials:

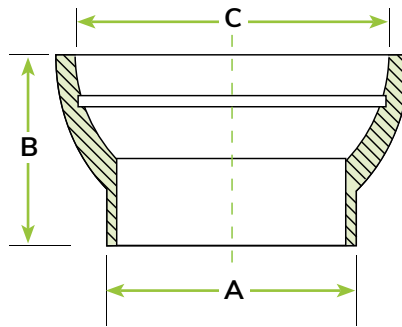
- 304 stainless steel

Product Notes:

- Butt weld
- Designed to fit standard inch tubing O.D.'s

Options: Call for price and delivery

- Custom lengths



PART #	REFERENCE ID	TUBE O.D. A (in)	LENGTH B (in)	SOCKET I.D. C (in)	O-RING SIZE	UNIT PRICE
0700140	50/30-150-WBSG-2.00	1.50	2.00	1.995	2-224	\$125.00
0700145	75/50-200-WBSG-2.52	2.00	2.52	3.00	2-232	\$175.00
0700150	102/75-300-WBSG-2.00	3.00	2.00	3.98	2-240	\$205.00

Conical Reducers

Materials:

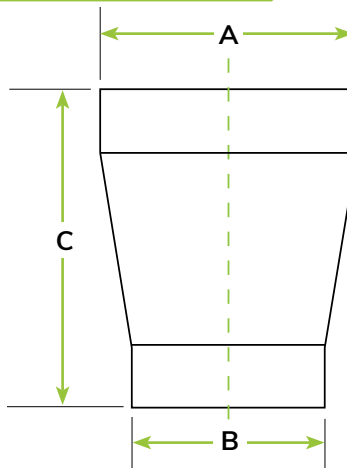
- Standard: 304 stainless steel

Product Notes:

- Designed to fit standard inch tubing O.D.'s
- Connects different tubing O.D.'s

Options: Call for price and delivery

- Custom flange combinations



PART #	REFERENCE ID	WALL THICKNESS (in)	TUBE O.D. A (in)	TUBE O.D. B (in)	LENGTH C (in)	UNIT PRICE
0700155	100X075X0.065-WCR-1.38	0.065	1.00	0.75	1.38	\$25.00
0700160	150X075X0.065-WCR-2.38	0.065	1.50	0.75	2.38	\$25.00
0700165	150X100X0.065-WCR-2.38	0.065	1.50	1.00	2.38	\$25.00
0700170	200X100X0.065-WCR-2.38	0.065	2.00	1.00	2.38	\$30.00
0700175	200X150X0.065-WCR-2.38	0.065	2.00	1.50	2.38	\$32.00
0700180	250X150X0.065-WCR-2.38	0.065	2.50	1.50	2.38	\$40.00
0700185	250X200X0.065-WCR-2.38	0.065	2.50	2.00	2.38	\$43.00
0700190	300X150X0.065-WCR-3.63	0.065	3.00	1.50	3.63	\$55.00
0700195	300X200X0.065-WCR-3.63	0.065	3.00	2.00	3.63	\$60.00
0700200	300X250X0.065-WCR-3.63	0.065	3.00	2.50	3.63	\$67.00
0700205	400X200X0.065-WCR-3.63	0.065	4.00	2.00	3.63	\$85.00
0700210	400X250X0.083-WCR-3.63	0.083	4.00	2.50	3.63	\$90.00
0700215	400X300X0.083-WCR-3.63	0.083	4.00	3.00	3.63	\$95.00

10 Ball Sockets - Reducers

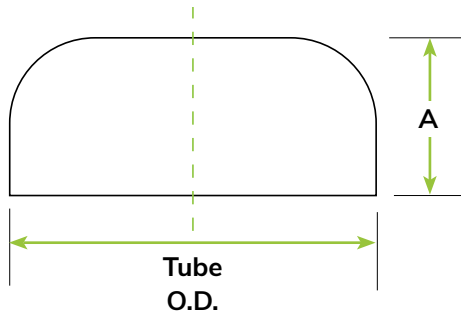
End Cap: 304 Stainless Steel

Materials:

- Standard: 304 stainless steel

Product Notes:

- Designed to fit standard inch tubing O.D.'s



PART #	REFERENCE ID	TUBE O.D. (in)	WALL THICKNESS (in)	LENGTH A (in)	UNIT PRICE
0700010	075X0.050-WEC-0.31	0.75	0.050	0.31	\$14.00
0700015	100X0.065-WEC-0.44	1.00	0.065	0.44	\$16.00
0700020	150X0.065-WEC-0.56	1.50	0.065	0.56	\$17.00
0700025	200X0.065-WEC-0.75	2.00	0.065	0.75	\$18.00
0700030	250X0.065-WEC-1.00	2.50	0.065	1.00	\$19.00
0700035	300X0.065-WEC-1.25	3.00	0.075	1.25	\$20.00
0700040	400X0.075-WEC-1.50	4.00	0.075	1.50	\$28.00
0700045	600X0.075-WEC-0.88	6.00	0.075	0.88	\$42.00

45° Elbow

Materials:

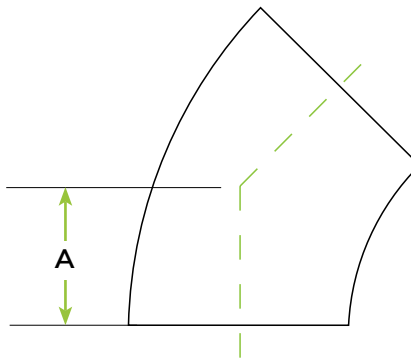
- Standard: 304 stainless steel

Product Notes:

- Radius elbow design

Options: Call for price and delivery

- Custom lengths
- Custom flange combinations



PART #	REFERENCE ID	WALL THICKNESS (in)	TUBE O.D. (in)	CENTERLINE A (in)	UNIT PRICE
0700220	075X0.065-WE45-0.46	0.065	0.75	0.46	\$12.00
0700225	100X0.065-WE45-0.63	0.065	1.00	0.63	\$14.00
0700230	150X0.065-WE45-0.94	0.065	1.50	0.94	\$15.00
0700235	200X0.065-WE45-1.25	0.065	2.00	1.25	\$18.00
0700240	250X0.065-WE45-1.56	0.065	2.50	1.56	\$31.00
0700245	300X0.065-WE45-1.881	0.065	3.00	1.88	\$34.00
0700250	400X0.083-WE45-2.50	0.083	4.00	2.50	\$58.00
0700255	600X0.120-WE45-3.75	0.120	6.00	3.75	\$145.00

45° Elbow with Tangents

Materials:

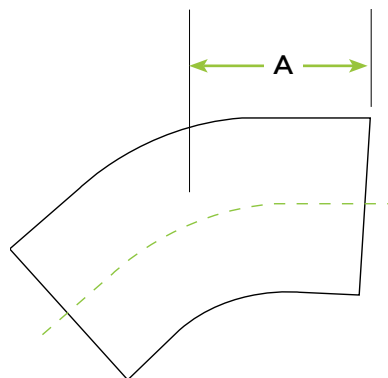
- Standard: 304 stainless steel

Product Notes:

- Radius elbow design

Options: Call for price and delivery

- Custom lengths
- Custom flange combinations



ORDERING NOTE

For aluminum elbow fittings see 90° mitered elbows pg. 10.9

PART #	REFERENCE ID	WALL THICKNESS (in)	TUBE O.D. (in)	CENTERLINE A (in)	UNIT PRICE
0700260	075X0.065-WE45T-0.765	0.065	0.75	0.76	\$21.00
0700265	100X0.065-WE45T-0.970	0.065	1.00	0.97	\$24.00
0700270	150X0.065-WE45T-1.530	0.065	1.50	1.53	\$26.00
0700275	200X0.065-WE45T-1.840	0.065	2.00	1.84	\$28.00
0700280	250X0.065-WE45T-3.003	0.065	2.50	3.00	\$25.00
0700285	300X0.065-WE45T-3.680	0.065	3.00	3.68	\$57.00
0700290	400X0.083-WE45T-4.770	0.083	4.00	4.78	\$68.00

90° Elbow

Materials:

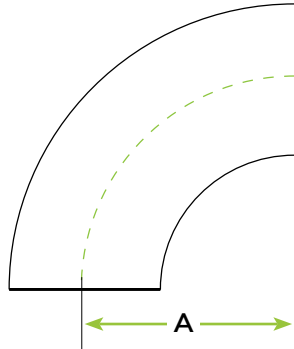
- Standard: 304 stainless steel

Product Notes:

- Radius elbow design

Options: Call for price and delivery

- Custom lengths
- Custom flange combinations



PART #	REFERENCE ID	WALL THICKNESS (in)	TUBE O.D. (in)	CENTERLINE A (in)	UNIT PRICE
0700410	075X0.035-WE90-1.00	0.035	0.75	1.00	\$12.50
0700415	075X0.065-WE90-1.12	0.065	0.75	1.12	\$12.50
0700420	100X0.065-WE90-1.50	0.065	1.00	1.50	\$14.00
0700430	150X0.065-WE90-2.25	0.065	1.50	2.25	\$17.00
0700435	200X0.065-WE90-3.00	0.065	2.00	3.00	\$23.00
0700440	250X0.065-WE90-3.75	0.065	2.50	3.75	\$36.00
0700445	300X0.065-WE90-4.5	0.065	3.00	4.50	\$40.00
0700450	400X0.083-WE90-6.00	0.083	4.00	6.00	\$65.00
0700455	600X0.109-WE90-9.00	0.109	6.00	9.00	\$170.00
0700460	800X0.109-WE90-12.00	0.109	8.00	12.00	\$285.00
0700465	1000X0.109-WE90-15.00	0.109	10.00	15.00	\$400.00

10

90° Elbows

90° Elbow with Tangents

Materials:

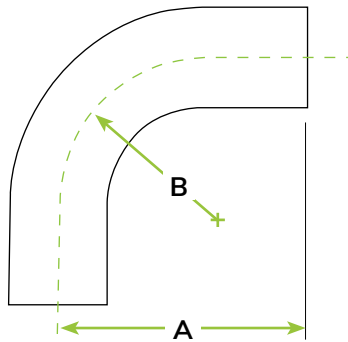
- Standard: 304 stainless steel

Product Notes:

- Radius elbow design

Options: Call for price and delivery

- Custom lengths
- Custom flange combinations



ORDERING NOTE

For aluminum elbow fittings see 90° mitered elbows on pg. 10.9

PART #	REFERENCE ID	WALL THICKNESS (in)	TUBE O.D. (in)	A (in)	B (in)	UNIT PRICE
0700405	050X0.035-WE90T-1.25	0.035	0.50	1.25	0.75	\$12.00
0700470	075X0.065-WE90T-1.42	0.065	0.75	1.42	1.00	\$27.00
0700475	100X0.065-WE90T-1.82	0.065	1.00	1.82	1.50	\$29.00
0700480	150X0.065-WE90T-2.41	0.065	1.50	2.41	2.25	\$30.00
0700485	150X0.065-WE90T-4.97	0.065	1.50	4.97	2.25	\$40.00
0700490	200X0.065-WE90T-4.06	0.065	2.00	4.06	3.00	\$42.00
0700495	200X0.065-WE90T-5.36	0.065	2.00	5.36	3.00	\$50.00
0700500	250X0.065-WE90T-5.19	0.065	2.50	5.19	3.75	\$54.00
0700505	300X0.065-WE90T-6.31	0.065	3.00	6.31	4.50	\$63.00
0700510	400X0.083-WE90T-8.31	0.083	4.00	8.31	6.00	\$105.00

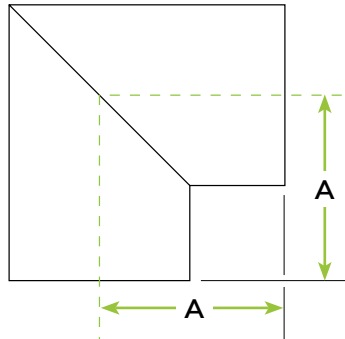
90° Elbow - Mitered

Materials:

- Standard: 304 stainless steel
- Alternative: 6061 aluminum (Call for price and delivery)

Options: Call for price and delivery

- Custom lengths
- Custom flange combinations
- Larger sizes



ORDERING NOTE

For radius elbow fittings see pg. 10.7 - 10.8

PART #	REFERENCE ID	WALL THICKNESS (in)	TUBE O.D. (in)	CENTERLINE A (in)	UNIT PRICE
0700310	075X0.065-WE90M-1.00	0.065	0.75	1.00	\$18.00
0700315	075X0.065-WE90M-1.40	0.065	0.75	1.40	\$18.00
0700325	100x0.065-WE90M-1.88	0.065	1.00	1.88	\$20.00
0700330	150X0.065-WE90M-2.25	0.065	1.50	2.25	\$35.00
0700335	150-0.065-WE90M-2.39	0.065	1.50	2.39	\$37.00
0700340	200X0.065-WE90M-2.59	0.065	2.00	2.59	\$39.00
0700345	200X0.065-WE90M-2.98	0.065	2.00	2.98	\$44.00
0700350	250X0.065-WE90M-3.00	0.065	2.50	3.00	\$51.00
0700355	250X0.065-WE90M-3.21	0.065	2.50	3.21	\$51.00
0700360	250X0.065-WE90M-3.75	0.065	2.50	3.75	\$83.00
0700365	300X0.065-WE90M-2.97	0.065	3.00	2.97	\$95.00
0700370	400X0.083-WE90M-3.88	0.083	4.00	3.88	\$165.00
0700375	400X0.083-WE90M-4.87	0.083	4.00	4.87	\$200.00
0700380	500X0.083-WE90M-4.25	0.083	5.00	4.25	\$210.00
0700385	600X0.083-WE90M-5.00	0.083	6.00	5.00	\$210.00
0700390	600X0.083-WE90M-6.06	0.083	6.00	6.06	\$250.00
0700395	800X0.120-WE90M-7.00	0.120	8.00	7.00	\$440.00
0700400	1000X0.120-WE90M-9.50	0.120	10.00	9.50	\$960.00

10
90° Elbows

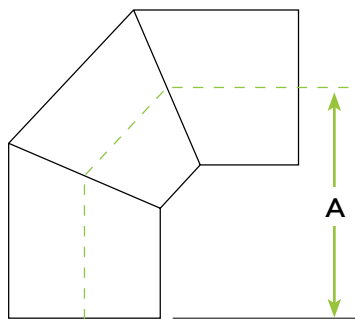
90° Elbow: Mitered High Conductance

Materials:

- Standard: 304 stainless steel
- Alternative: 6061 aluminum (Call for price and delivery)

Options: Call for price and delivery

- Custom lengths
- Custom flange combinations
- Larger sizes



PART #	REFERENCE ID	WALL THICKNESS (in)	TUBE O.D. (in)	CENTERLINE A (in)	UNIT PRICE
0700295	600X0.083-WE90MHC-9.00	0.083	6.00	9.00	CALL
0700300	800X0.120-WE90MHC-12.00	0.120	8.00	12.00	CALL
0700305	1000X0.0125-WE90MHC-15.00	0.125	10.00	15.00	CALL

180° Returns

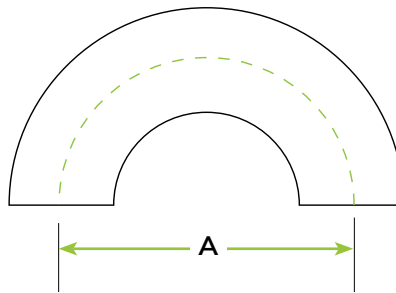
Materials:

- Standard: 304 stainless steel

Options:

Call for price and delivery

- Custom lengths
- Custom flange combinations



PART #	REFERENCE ID	WALL THICKNESS (in)	TUBE O.D. (in)	CENTERLINE A (in)	UNIT PRICE
0700515	075X0.065-WE180-2.25	0.065	0.75	2.25	\$60.00
0700520	100X0.065-WE180-3.00	0.065	1.00	3.00	\$75.00
0700525	150X0.065-WE180-4.50	0.065	1.50	4.50	\$90.00
0700530	200X0.065-WE180-6.00	0.065	2.00	6.00	\$120.00

Tee

Materials:

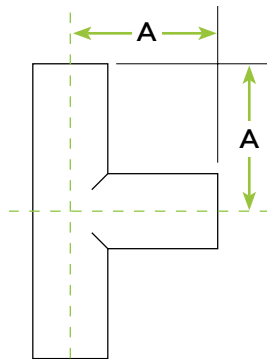
- Standard: 304 stainless steel
- Alternative: 6061 aluminum (Call for price and delivery)

Product Notes:

- Pulled ports optimize vacuum performance

Options: Call for price and delivery

- Custom lengths
- Custom flange combinations



PART #	REFERENCE ID	WALL THICKNESS (in)	TUBE O.D. (in)	CENTERLINE A (in)	UNIT PRICE
0700555	050X0.049-WTEE-0.75	0.049	0.50	0.75	\$30.00
0700560	075X0.035-WTEE-1.00	0.035	0.75	1.00	\$30.00
0700565	075X0.065-WTEE-1.40	0.065	0.75	1.40	\$30.00
0700570	100X0.065-WTEE-1.80	0.065	1.00	1.80	\$31.00
0700575	100X0.065-WTEE-1.88	0.065	1.00	1.88	\$21.00
0700580	150X0.065-WTEE-2.25	0.065	1.50	2.25	\$30.00
0700585	150X0.065-WTEE-2.39	0.065	1.50	2.39	\$32.00
0700590	150X0.065-WTEE-2.41	0.065	1.50	2.41	\$36.00
0700595	200X0.065-WTEE-2.59	0.065	2.00	2.59	\$35.00
0700600	200X0.065-WTEE-3.00	0.065	2.00	3.00	\$35.00
0700605	250X0.065-WTEE-3.00	0.065	2.50	3.00	\$65.00
0700610	250X0.065-WTEE-3.75	0.065	2.50	3.75	\$70.00
0700615	300X0.065-WTEE-3.25	0.065	3.00	3.25	\$65.00
0700620	400X0.083-WTEE-3.88	0.083	4.00	3.88	\$100.00
0700625	400X0.083-WTEE-4.87	0.083	4.00	4.87	\$110.00
0700630	600X0.083-WTEE-5.00	0.083	6.00	5.00	\$475.00
0700635	600X0.083-WTEE-6.06	0.083	6.00	6.06	\$475.00
0700640	800X0.109-WTEE-7.00	0.109	8.00	7.00	\$650.00
0700645	1000X0.120-WTEE-9.50	0.120	10.00	9.50	\$1,375.00

10 180° Returns - Tees

Tee: Reducer

Materials:

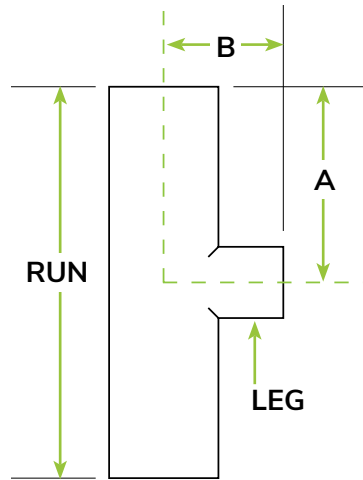
- Standard: 304 stainless steel
- Alternative: 6061 aluminum
(Call for price and delivery)

Product Notes:

- Pulled ports optimize vacuum performance
- Reducing intersection for different tube sizes

Options: Call for price and delivery

- Custom lengths
- Custom flange combinations



PART #	REFERENCE ID	RUN O.D. (in)	LEG O.D. (in)	A (in)	B (in)	UNIT PRICE
0700650	100X050X0.065-WRT-1.88X1.00	1.00	0.50	1.88	1.00	\$27.00
0700655	100X075X0.065-WRT-1.88X1.12	1.00	0.75	1.88	1.12	\$27.00
0700660	150X050X0.065-WRT-2.25X1.25	1.50	0.50	2.25	1.25	\$32.00
0700665	150X075X0.065-WRT-2.25X1.38	1.50	0.75	2.25	1.38	\$32.00
0700670	150X100X0.065-WRT-2.25X2.13	1.50	1.00	2.25	2.13	\$32.00
0700680	200X075X0.065-WRT-3.00X1.63	2.00	0.75	3.00	1.63	\$50.00
0700683	200X100X0.065-WRT-3.00X2.38	2.00	1.00	3.00	2.38	\$50.00
0700685	200X150X0.065-WRT-3.00X2.50	2.00	1.50	3.00	2.50	\$80.00
0700690	250X150X0.065-WRT-3.00X2.75	2.50	1.50	3.00	2.75	\$80.00
0700695	250X200X0.065-WRT-3.00X3.25	2.50	2.00	3.00	3.25	\$80.00
0700700	300X150X0.065-WRT-3.25X3.00	3.00	1.50	3.25	3.00	\$85.00
0700705	300X200X0.065-WRT-3.25X3.50	3.00	2.00	3.25	3.50	\$90.00
0700710	300X250X0.065-WRT-3.25X3.25	3.00	2.50	3.25	3.25	\$90.00
0700715	400X150X0.083-WRT-3.88X3.50	4.00	1.50	3.88	3.50	\$115.00
0700720	400X200X0.083-WRT-3.88X4.00	4.00	2.00	3.88	4.00	\$115.00
0700725	400X250X0.083-WRT-3.88X3.75	4.00	2.50	3.88	3.75	\$120.00
0700730	400X300X0.083-WRT-3.88X3.75	4.00	3.00	3.88	3.75	\$125.00
0700735	500X400X0.083-WRT-4.25X4.38	5.00	4.00	4.25	4.38	\$300.00
0700740	600X150X0.083-WRT-5.00X4.50	6.00	1.50	5.00	4.50	\$230.00
0700745	600X200X0.083-WRT-5.00X5.00	6.00	2.00	5.00	5.00	\$230.00
0700750	600X250X0.083-WRT-5.00X4.75	6.00	2.50	5.00	4.75	\$260.00
0700755	600X400X0.083-WRT-5.00X4.88	6.00	4.00	5.00	4.88	\$300.00
0700760	600X500X0.083-WRT-5.00X4.75	6.00	5.00	5.00	4.75	\$400.00
0700765	800X600X0.109-WRT-7.00X7.00	8.00	6.00	7.00	7.00	\$635.00

10 Tee Reducers

Cross

Materials:

- Standard: 304 stainless steel
- Alternative: 6061 aluminum (Call for price and delivery)

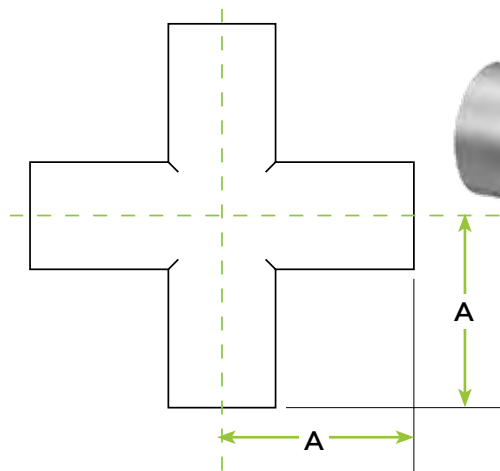
Product Notes:

- Pulled ports optimize vacuum performance

Options:

Call for price and delivery

- Custom lengths
- Custom flange combinations



PART #	REFERENCE ID	WALL THICKNESS (in)	TUBE O.D. (in)	CENTERLINE A (in)	UNIT PRICE
0700770	050X0.049-W4X-0.75	0.049	0.50	0.75	\$58.00
0700775	075X0.035-W4X-1.00	0.035	0.75	1.00	\$42.00
0700780	075X0.065-W4X-1.40	0.065	0.75	1.40	\$42.00
0700785	100X0.065-W4X-1.80	0.065	1.00	1.80	\$44.00
0700790	100X0.065-W4X-1.88	0.065	1.00	1.88	\$46.00
0700795	150X0.065-W4X-2.25	0.065	1.50	2.25	\$51.00
0700800	150X0.065-W4X-2.39	0.065	1.50	2.39	\$78.00
0700805	200X0.065-W4X-2.59	0.065	2.00	2.59	\$70.00
0700810	200X0.065-W4X-3.00	0.065	2.00	3.00	\$69.00
0700815	250X0.065-W4X-3.00	0.065	2.50	3.00	\$84.00
0700820	250X0.065-W4X-3.75	0.065	2.50	3.75	\$160.00
0700825	300X0.065-W4X-3.25	0.065	3.00	3.25	\$140.00
0700830	400X0.083-W4X-3.88	0.083	4.00	3.88	\$195.00
0700835	400X0.083-W4X-4.87	0.083	4.00	4.87	\$205.00
0700840	600X0.083-W4X-5.00	0.083	6.00	5.00	\$715.00
0700845	600X0.083-W4X-6.06	0.083	6.00	6.06	\$715.00
0700850	800X0.120-W4X-7.00	0.120	8.00	7.00	CALL
0700855	1000X0.120-W4X-9.50	0.120	10.00	9.50	CALL

Cross: Reducer

Materials:

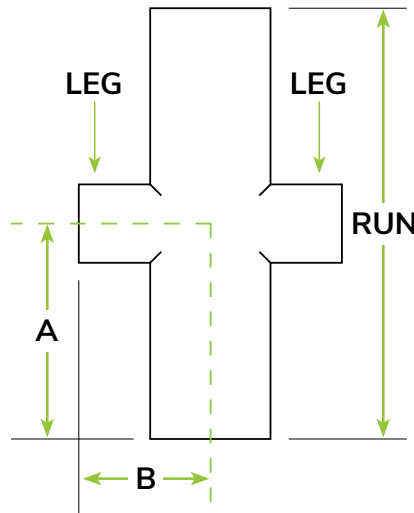
- Standard: 304 stainless steel
- Alternative: 6061 aluminum (Call for price and delivery)

Product Notes:

- Pulled ports optimize vacuum performance
- Reducing intersection for different tube sizes

Options: Call for price and delivery

- Custom lengths
- Custom flange combinations



PART #	REFERENCE ID	RUN O.D. (in)	LEG O.D. (in)	A (in)	B (in)	UNIT PRICE
0700860	100X050X0.065-WR4X-1.88X1.00	1.00	0.50	1.88	1.00	\$125.00
0700865	100X075X0.065-WR4X-1.88X1.12	1.00	0.75	1.88	1.12	\$125.00
0700870	150X050X0.065-WR4X-2.25X1.25	1.50	0.50	2.25	1.25	\$125.00
0700875	150X075X0.065-WR4X-2.25X1.38	1.50	0.75	2.25	1.38	\$125.00
0700880	150X100X0.065-WR4X-2.25X2.13	1.50	1.00	2.25	2.13	\$125.00
0700890	200X075X0.065-WR4X-3.00X1.63	2.00	0.75	3.00	1.63	\$125.00
0700894	200X100X0.065-WR4X-3.00X2.38	2.00	1.00	3.00	2.38	\$130.00
0700895	200X150X0.065-WR4X-3.00X2.50	2.00	1.50	3.00	2.50	\$135.00
0700900	250X150X0.065-WR4X-3.00X2.75	2.50	1.50	3.00	2.75	\$140.00
0700905	250X200X0.065-WR4X-3.00X3.25	2.50	2.00	3.00	3.25	\$175.00
0700910	300X150X0.065-WR4X-3.25X3.00	3.00	1.50	3.25	3.00	\$190.00
0700915	300X200X0.065-WR4X-3.25X3.50	3.00	2.00	3.25	3.20	\$190.00
0700920	300X250X0.065-WR4X-3.25X3.25	3.00	2.50	3.25	3.25	\$200.00
0700925	400X150X0.083-WR4X-3.88X3.50	4.00	1.50	3.88	3.50	\$240.00
0700930	400X200X0.083-WR4X-3.88X4.00	4.00	2.00	3.88	4.00	\$260.00
0700935	400X0.083X250X0.065-WR4X-3.88X3.75	4.00	2.50	3.88	3.75	\$295.00
0700940	400X300X0.083-WR4X-3.88X3.75	4.00	3.00	3.88	3.75	\$325.00
0700945	500X400X0.083-WR4X-4.25X4.38	5.00	4.00	4.25	4.38	CALL
0700950	600X150X0.083-WR4X-5.00X4.50	6.00	1.50	5.00	4.50	\$500.00
0700955	600X200X0.083-WR4X-5.00X5.00	6.00	2.00	5.00	5.00	CALL
0700960	600X250X0.083-WR4X-5.00X4.75	6.00	2.50	5.00	4.75	\$645.00
0700965	600X300X0.083-WB4X-5.00X4.75	6.00	3.00	5.00	4.75	\$650.00
0700970	600X400X0.083-WB4X-5.00X4.88	6.00	4.00	5.00	4.88	\$685.00
0700975	600X500X0.083-WB4X-5.00X4.75	6.00	5.00	5.00	4.75	CALL
0700980	800X600X0.083-WB4X-7.00X6.00	8.00	6.00	7.00	6.00	\$1,240.00

10
Cross Reducer

5-Way Cross

Materials:

- Standard: 304 stainless steel
- Alternative: 6061 aluminum (Call for price and delivery)

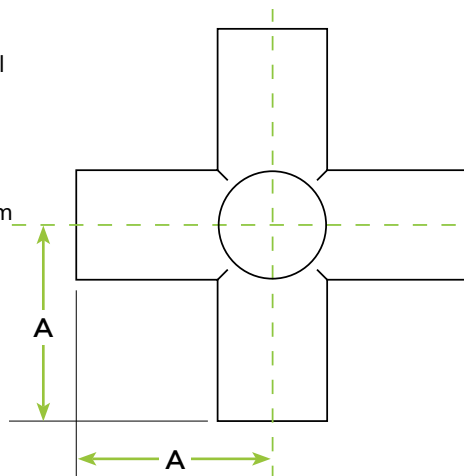
Product Notes:

- Pulled ports optimize vacuum performance

Options:

Call for price and delivery

- Custom lengths
- Custom flange combinations



PART #	REFERENCE ID	WALL THICKNESS (in)	TUBE O.D. (in)	CENTERLINE A (in)	UNIT PRICE
0700985	075x0.065-W5X-1.00	0.035	0.75	1.00	\$215.00
0700990	100X0.065-W5X-1.88	0.065	1.00	1.88	\$305.00
0700995	150X0.065-W5X-2.25	0.065	1.50	2.25	\$305.00
0701000	200X0.065-W5X-3.00	0.065	2.00	3.00	\$385.00
0701005	250X0.065-W5X-3.00	0.065	2.50	3.00	\$510.00
0701010	250X0.065-W5X-3.75	0.065	2.50	3.75	\$575.00
0701015	300X0.065-W5X-3.25	0.065	3.00	3.25	\$620.00
0701020	400X0.083-W5X-3.88	0.083	4.00	3.88	\$705.00
0701025	400X0.083-W5X-4.87	0.083	4.00	4.87	\$750.00
0701030	500X0.083-W5X-4.25	0.083	5.00	4.25	\$790.00
0701035	600X0.083-W5X-5.00	0.083	6.00	5.00	CALL
0701040	600X0.083-W5X-6.06	0.083	6.00	6.06	CALL
0701045	800X0.120-W5X-7.00	0.120	8.00	7.00	CALL
0701050	1000X0.120-W5X-9.50	0.120	10.00	9.50	CALL

6-Way Cross

Materials:

- Standard: 304 stainless steel
- Alternative: 6061 aluminum (Call for price and delivery)

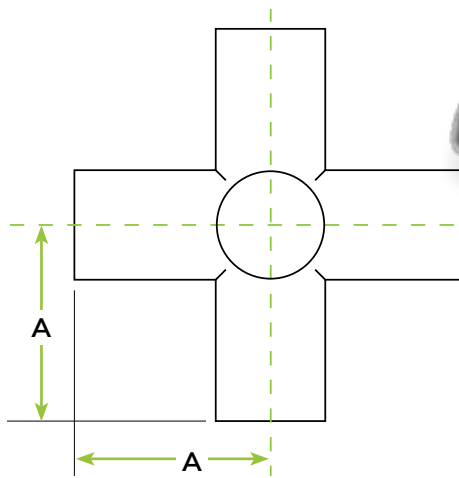
Product Notes:

- Pulled ports optimize vacuum performance

Options:

Call for price and delivery

- Custom lengths
- Custom flange combinations



PART #	REFERENCE ID	WALL THICKNESS (in)	TUBE O.D. (in)	CENTERLINE A (in)	UNIT PRICE
0701055	075x0.035-W6X-1.00	0.035	0.75	1.00	\$215.00
0701060	100x0.065-W6X-1.88	0.065	1.00	1.88	\$435.00
0701065	150X0.065-W6X-2.25	0.065	1.50	2.25	\$250.00
0701070	200X0.065-W6X-3.00	0.065	2.00	3.00	\$490.00
0701075	250X0.065-W6X-3.00	0.065	2.50	3.00	\$535.00
0701080	250X0.065-W6X-3.75	0.065	2.50	3.75	\$510.00
0701085	300X0.065-W6X-3.25	0.065	3.00	3.25	\$735.00
0701090	400X0.083-W6X-3.88	0.083	4.00	3.88	\$875.00
0701095	400X0.083-W6X-4.87	0.083	4.00	4.87	\$885.00
0701100	500X0.083-W6X-4.25	0.083	5.00	4.25	CALL
0701105	600X0.083-W6X-5.00	0.083	6.00	5.00	CALL
0701110	600X0.083-W6X-6.06	0.083	6.00	6.06	CALL
0701115	800X0.120-W6X-7.00	0.120	8.00	7.00	CALL
0701120	1000X0.120-W6X-9.50	0.120	10.00	9.50	CALL

10
6-Way Cross

RELIABLE UNDER ALL CONDITIONS.



Process stability requires reliable components - under all conditions. Don't compromise the reliability of your processes - benefit from the renowned performance of VAT vacuum valve solutions. Now available through **ANCORP**.



ANCORP is proud to announce that we are now an official distributor of a wide range of VAT vacuum valves. Order your next VAT valve from **ANCORP** today at sales@ancorp.com or call us at 1-800-352-6431 (1-800-FLANGE1)

Glass Components & Chamber Accessories



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Glass Components and CHAMBER ACCESSORIES

Overview

Vacuum viewports, also known as windows or sight glasses, are commonly used to observe or illuminate processes inside of a vacuum chamber.

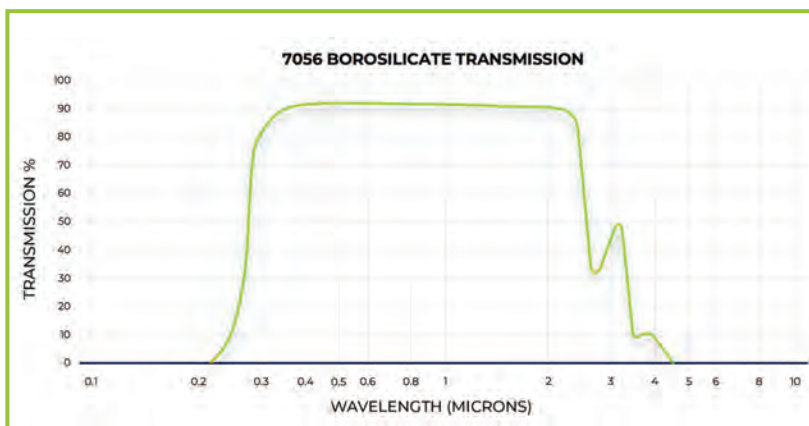
In optical applications, viewports are used to transmit electromagnetic radiation into or out of a vacuum chamber. Viewport selection is typically based on requirements for flange type, transmission range, thermal stability, durability, and other optical and physical properties of the window material.

ANCORP offers a wide selection of vacuum viewports with borosilicate glass, quartz, fused silica, sapphire, zinc selenide, magnesium fluoride, and calcium fluoride windows and designs rated for high and ultra-high vacuum (UHV) applications.

Weldable viewports provide a simple method of adding an observation window to coating systems and other applications that deposit materials onto the

inner surfaces of the chamber. The window material in these viewports is replaceable. The window material is captured between a pair of sealing fluoroelastomer rings, as the assembly is compressed together by a retaining flange. Note that because this is a fluoroelastomer sealed assembly the ultimate pressure rating for this viewport is limited to high vacuum.

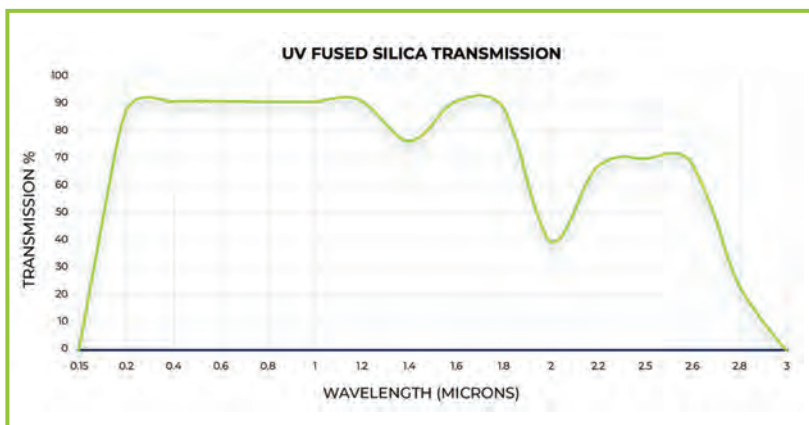
Add-a-doors are an excellent way to provide physical access to the interior of your vacuum system. Add-a-doors bolt onto an existing standard flange port on your chamber and can function as a viewing window as well as access point for your system. The body of an add-a-door is a CF flange generally capable of UHV pressures, but the door is sealed with a fluoroelastomer O-ring. Thus the ultimate vacuum pressure rating for this component is limited to high vacuum. **NOTE:** **ANCORP's** viewport add-a-doors have been designed to allow for the replacement of the windows.



7056 BOROSILICATE GLASS

ANCORP's 7056 borosilicate glass viewports are excellent general-purpose windows for observation within a vacuum chamber. Borosilicate glass has a low coefficient of thermal expansion and has high transmission in the visible range.

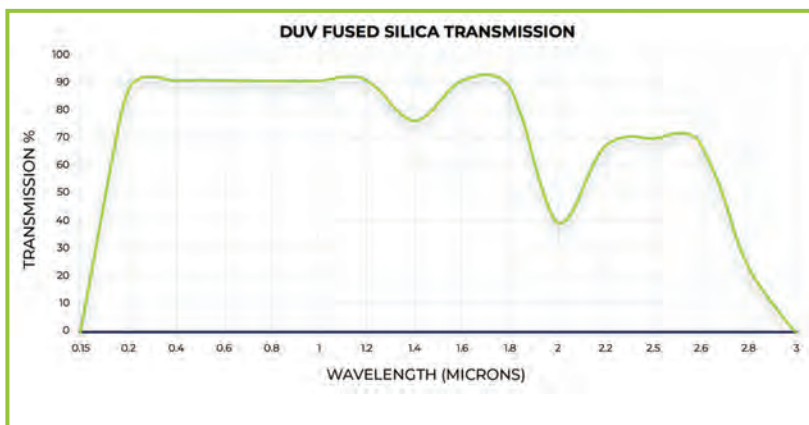
Borosilicate glass viewports are available with zero-length profile ConFlat (CF), ISO-QF (quick flange, KF, NW), and ISO-LF (large flange, ISO-K) flanges.



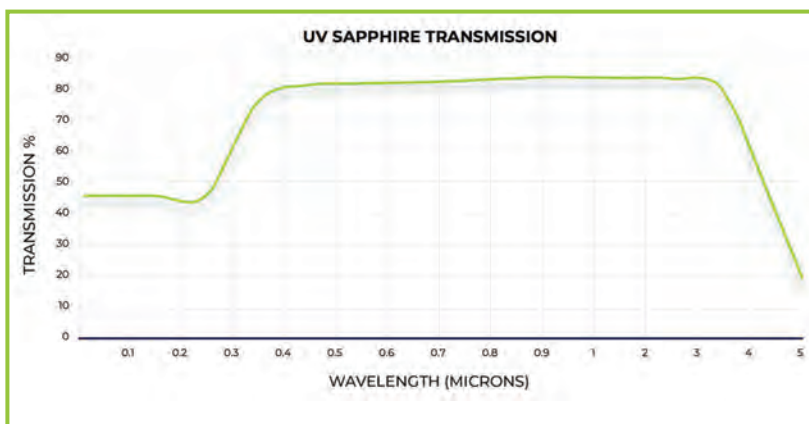
FUSED SILICA

ANCORP offers fused silica viewports in both ultraviolet (UV) grade and deep ultraviolet (DUV) laser-grade viewing window materials. Fused silica provides better transmission in the UV range compared to standard borosilicate glass. Fused silica is a type of ultra-pure non-crystalline synthetic quartz with great optical and thermal properties. It is colorless, resistant to abrasion and thermal shock, non-birefringent, has high working temperatures, and has a low coefficient of thermal expansion.

Zero-length UV grade fused silica viewports are available in ConFlat (CF), and ISO-QF (Quick Flange, KF, NW) flanges for high vacuum and ultra-high vacuum (UHV) applications.



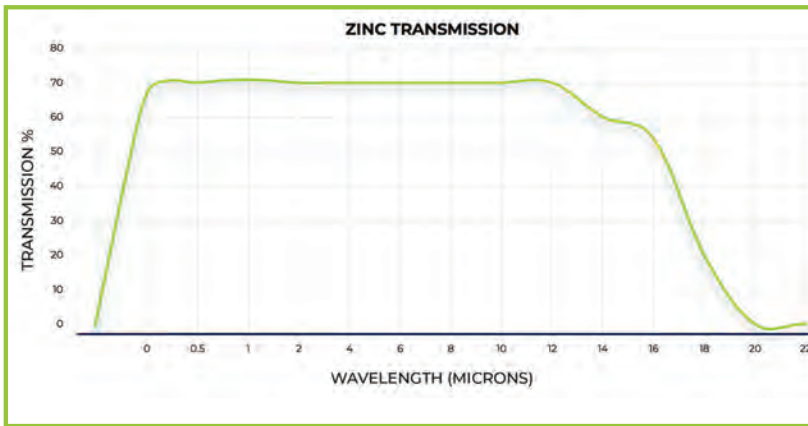
Zero-length DUV grade fused silica viewports are available in a variety of ConFlat (CF) flange sizes for ultra-high vacuum (UHV) performance. Single AR and broadband AR anti-reflective coatings are available for minimized reflectance.



SAPPHIRE

Sapphire has a broad transmission range from UV to near-infrared (NIR) and is excellent in harsh environments and high temperatures. Sapphire is durable, scratch resistant, birefringent, and has a low coefficient of thermal expansion.

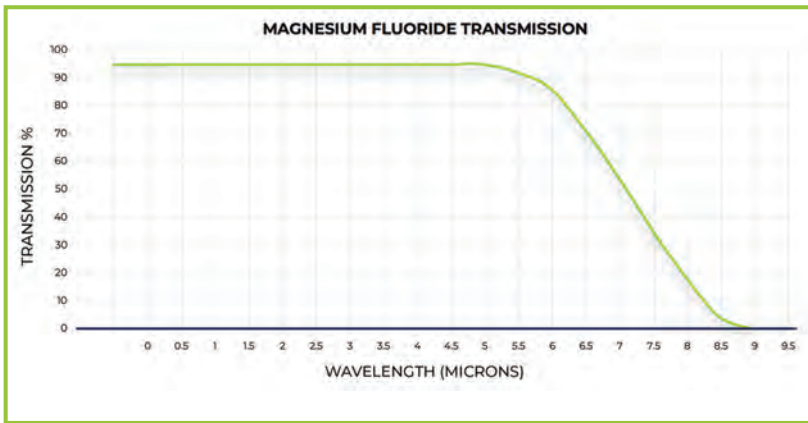
ANCORP offers zero-length UV grade sapphire viewports in ConFlat (CF) and ISO-QF (Quick flange, KF, NW) flange sizes for use in high and ultra-high vacuum (UHV) applications.



ZINC SELENIDE (ZnSe)

Zinc Selenide (ZnSe) viewports are ideal for transmission in the near infrared (NIR) to IR range. Zinc selenide viewports are commonly used in IR applications such as thermal imaging and FLIR cameras. Zinc selenide has low absorption and high resistance to thermal shock.

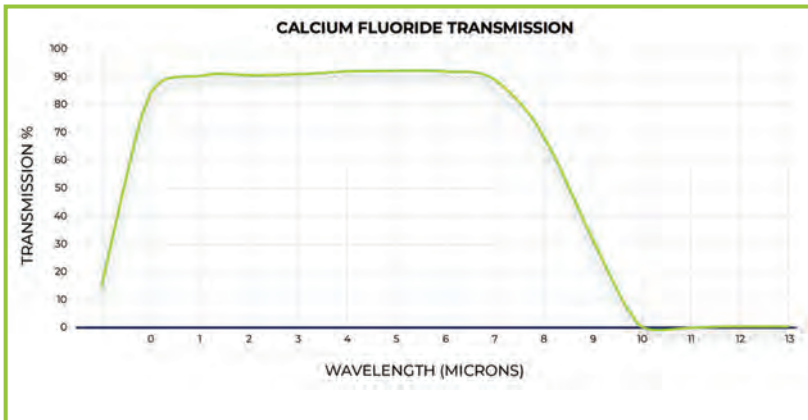
ANCORP offers both anti-reflective (AR) coated and uncoated zero-length zinc selenide viewports with zero-length ConFlat (CF) flanges for use in ultra-high vacuum (UHV) applications.



MAGNESIUM FLUORIDE (MgF2)

Magnesium Fluoride (MgF2) viewports offer an extended range of transmission from the vacuum ultraviolet (VUV) region into the mid-IR. Magnesium fluoride is birefringent, very durable, and resistant to physical stress and thermal shock.

ANCORP offers zero-length magnesium fluoride viewports with ConFlat (CF) flanges for use in ultra-high vacuum (UHV) environments.

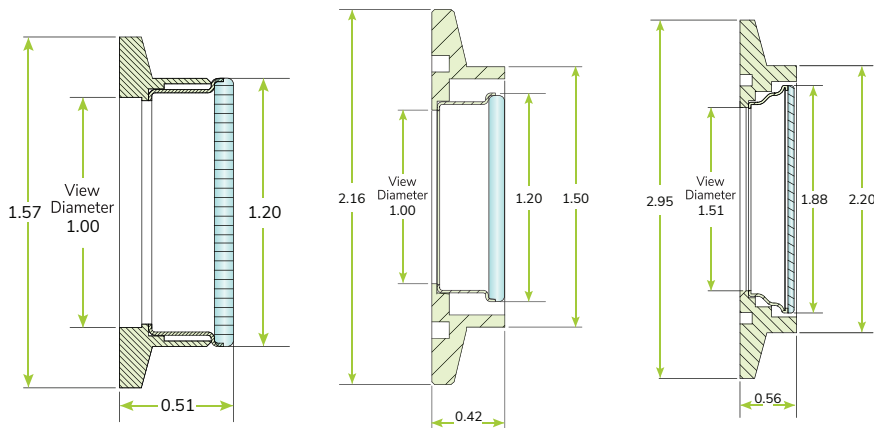


CALCIUM FLUORIDE (CaF2)

Calcium Fluoride (CaF2) viewports provide extended transmission from the vacuum ultraviolet (VUV) into the infrared range. Calcium fluoride features low absorption, a high laser damage threshold, and good moisture and chemical resistance. Calcium fluoride is birefringent and has a low index of refraction.

ANCORP offers zero-length calcium fluoride viewports with ConFlat (CF) flanges for use in ultra-high vacuum (UHV) applications.

ISO-QF Zero Length Viewports



QF25
Borosilicate Glass Viewport

QF40
Borosilicate Glass Viewport

QF50
Borosilicate Glass Viewport



Features:

- Vacuum rating of 1×10^{-8} torr
- Temperature maximum: 200°C
- ISO-QF (KF, NW) flange
- Body is manufactured from 304 stainless steel
- Viewing window is manufactured from 7056 borosilicate glass
- Transition material is Kovar
- Avoid thermal changes in excess of 10°C/min
- Do not expose to pressure above 1 atmosphere

PART #	REFERENCE ID	VIEW DIAMETER	UNIT PRICE
9110002	QF25-ZLVP-1.000	1.0	\$110.00
9110000	QF40-ZLVP-1.000	1.0	\$125.00
9110001	QF50-ZLVP-1.500	1.5	\$100.00

Zero Length Viewports

11

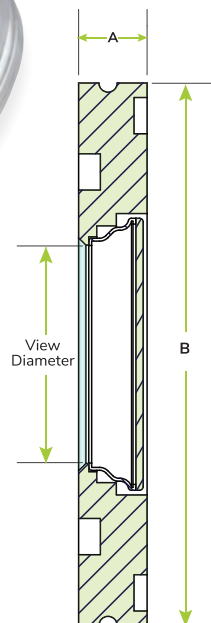
ISO-LF Zero Length Viewports

Features:

- Vacuum rating of 1×10^{-8} torr
- Temperature maximum of 150°C
- ISO-LF (ISO-K) flange
- Body is manufactured from 304 stainless steel
- Viewing window material is 7056 borosilicate glass
- Transition material is Kovar
- Avoid thermal changes in excess of 10°C/minute
- Do not expose to pressure above 1 atmosphere

Options: Call for price and availability

- Larger sizes
- Alternative viewing window materials: Quartz, Sapphire

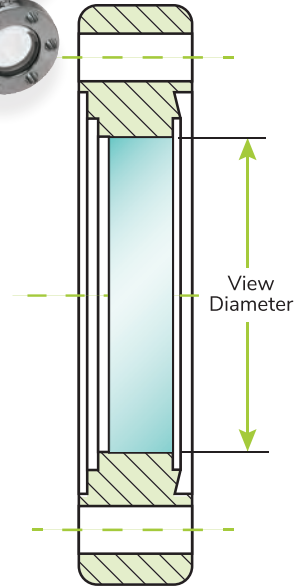


PART #	REFERENCE ID	A	B	VIEW DIAMETER	UNIT PRICE
9110005	LF63-ZLVP-1.500	0.472	3.74	1.50	\$165.00
9110006	LF80-ZLVP-1.500	0.472	4.33	1.50	\$205.00
9110007	LF100-ZLVP-2.67	0.472	5.12	2.67	\$320.00
9110008	LF160-ZLVP-4.00	0.472	7.09	3.98	\$440.00
9110009	LF200-ZLVP-5.52	0.472	9.45	5.52	\$675.00
9110010	LF250-ZVP	0.472	10.00	6.00	CALL

CF Zero Length Viewports

Features:

- Vacuum rating of 1×10^{-10} torr
- Temperature maximum of 400°C
- ConFlat flange
- Flange material is 304 stainless steel
- Viewing window is 7056 borosilicate glass
- Transition material is Kovar
- Avoid thermal changes in excess of 10°C/minute
- Do not expose to pressure above 1 atmosphere



PART #	REFERENCE ID	FLANGE SIZE	VIEW DIAMETER	UNIT PRICE
9110025	CF133-ZLVP-0.625	1.33	0.63	\$120.00
9110026	CF212-ZLVP-0.625	2.12	0.63	\$125.00
9110027	CF275-ZLVP-1.500	2.75	1.50	\$135.00
9110028	CF338-ZLVP-1.500	3.38	1.50	\$160.00
9110029	CF450-ZLVP-2.672	4.50	2.67	\$275.00
9110030	CF462-ZLVP-2.672	4.62	2.67	\$295.00
9110031	CF600-ZLVP-3.980	6.00	3.98	\$410.00
9110032	CF675-ZLVP-3.980	6.75	3.98	\$675.00
9110033	CF800-ZLVP-5.520	8.00	5.52	\$700.00
9110034	CF1000-ZLVP-5.520	10.00	5.52	\$775.00

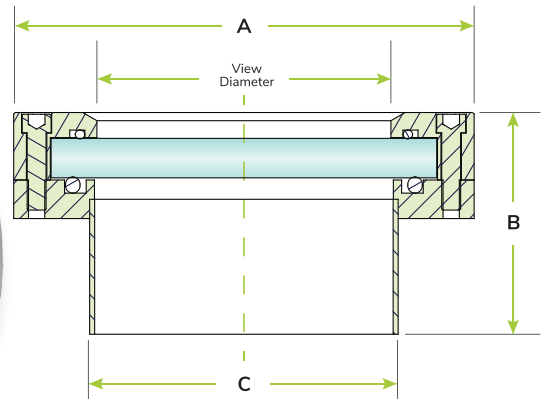
Weldable Viewports

11

Weldable Glass and Quartz Viewports

Features:

- High Vacuum rating of 1×10^{-8} torr
- Temperature maximum of 150°C
- Body is manufactured from 304 stainless steel
- Viewing window is borosilicate glass (Borofloat® 33)
- Viton seal
- Aluminum retaining flange
- Avoid thermal changes in excess of 10°C/minute
- Do not expose to pressure above 1 atmosphere
- Options: Call for price and availability
 - Larger sizes
 - Custom lengths



PART #	REFERENCE ID	VIEWING MATERIAL	A (in)	B (in)	C (in)	VIEW DIAMETER (in)	UNIT PRICE
9118001	400-WVP-3.812	7740 Glass	5.97	2.88	4.00	3.81	\$465.00
9118002	600-WVP-6.00	7740 Glass	7.97	2.88	6.00	6.00	\$555.00
9118003	250-WVP-2.50	7740 Glass	4.47	2.88	2.50	2.50	\$400.00
9118005	250-WVP-2.50-Q	Quartz	4.47	2.88	2.50	2.50	\$550.00
9118010	400-WVP-3.812-Q	Quartz	5.97	2.88	4.00	3.81	\$625.00
9118015	600-WVP-6.00-Q	Quartz	7.97	2.88	6.00	6.00	\$750.00

Add-A-Door Viewport

Materials:

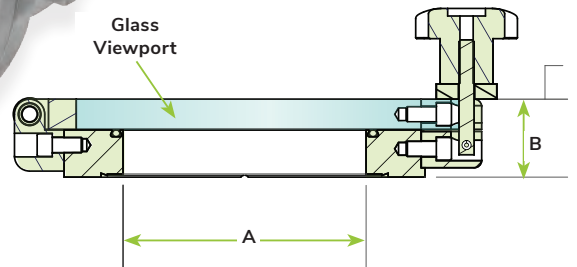
- Body: 304 stainless steel
- Door: 304 stainless steel
- Viewing window: 7056 borosilicate glass
- Seals: Viton®
- Fastening knob: Polypropylene plastic (PP)
- Temperature: 150°C maximum
- Vacuum rating: 1×10^{-8} Torr, High Vacuum

Product Notes:

- Avoid Thermal changes in excess of 10°C/minute
- Do not expose to pressure above 1 atmosphere

Options: Call for price and availability

- Larger sizes
- Viewing window: Quartz



PART #	REFERENCE ID	FLANGE	WINDOW MATERIAL	A (in)	B (in)	VIEWING AREA (in)	UNIT PRICE
9110222	CF600-ADVP-3.8	CF600	7056 Glass	4.02	2.16	3.812	\$1,850.00
9110223	CF450-ADVP-2.5	CF450	7056 Glass	2.50	1.68	2.50	\$1,450.00
9110224	CF800-ADVP-6.0	CF800	7056 Glass	6.00	2.00	6.00	\$2,250.00
9110225	CF1000-ADVP-6.0	CF1000	7056 Glass	7.88	2.10	6.00	\$2,500.00

Add-A-Door



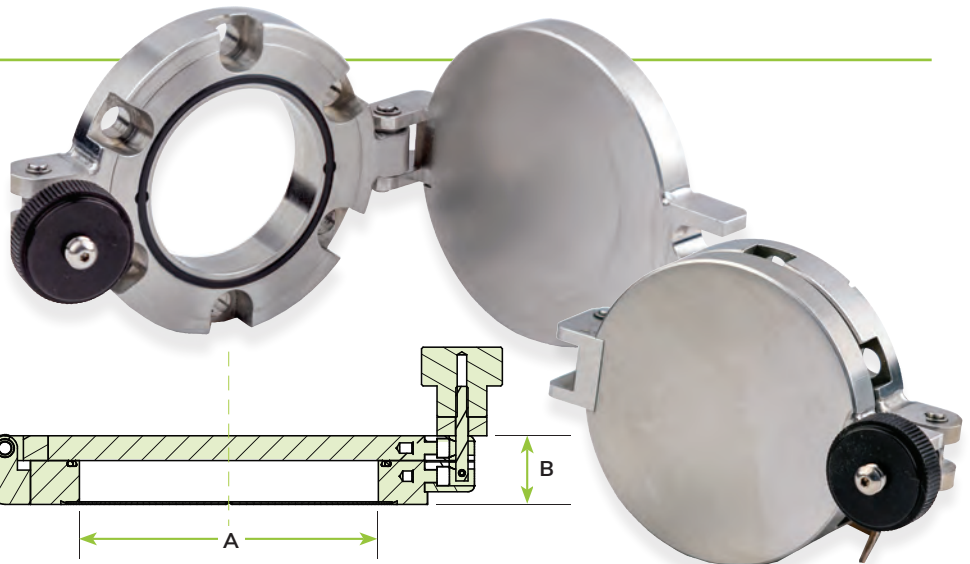
Add-A-Door

Materials:

- Body: 304 stainless steel
- Door: 304 stainless steel
- Seals: Viton®
- Fastening knob: Polypropylene plastic (PP)
- Temperature: 150°C maximum
- Vacuum rating: 1×10^{-8} Torr, High Vacuum

Product Notes:

- Avoid Thermal changes in excess of 10°C/minute
- Do not expose to pressure above 1 atmosphere
- Larger sizes available



PART #	REFERENCE ID	FLANGE	A (in)	B (in)	UNIT PRICE
9110101	CF275-AD	CF275	1.50	0.94	\$700.00
9110102	CF450-AD	CF450	2.50	1.18	\$790.00
9110103	CF600-AD	CF600	4.02	1.28	\$990.00
9110104	CF800-AD	CF800	6.00	1.38	\$1,375.00
9110105	CF1000-AD	CF1000	7.88	1.47	\$1,990.00

ConFlat (CF) UV Grade Fused Silica Viewports

Description:

- UV Grade Fused Silica viewport
- Zero-length profile
- ConFlat flange
- Bakeable to 200°C
- Non-magnetic materials
- Excellent transmission for UV to 250nm
- UHV compatible

Options: Call for price & availability

- Custom window sizes
- Alternative Materials: Titanium, 316LN

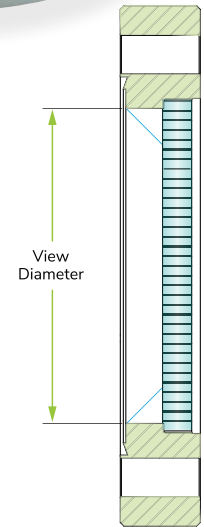


Specifications:

- Flange material:
 - 316L stainless steel (1.33")
 - 304 stainless steel (2.75" to 8.00")
- Window material: Corning HPFS 7980 Fused Silica or equivalent
- TWD < 10 λ @ 632nm (peak to valley)

- Parallelism < 30 arc minutes
- Surface finish: 40/20 scratch-dig
- Thermal range: -100°C to 200°C
- Bake-out ramp rate: 20°C per minute
- Homogeneity grade: F
- Inclusion class: 2
- Leak rate < 1 X 10⁻⁹ atm-cc/sec He

PART #	REFERENCE ID	FLANGE SIZE	VIEW DIAMETER	UNIT PRICE
9118029	CF133-ZLVP-Q-UV-0.63	1.33	0.63	\$205.00
9118030	CF275-ZLVP-Q-UV-1.40	2.75	1.40	\$225.00
9118033	CF338-ZLVP-Q-UV-1.40	3.37	1.40	\$250.00
9118032	CF450-ZLVP-Q-UV-2.69	4.50	2.69	\$750.00
9118031	CF600-ZLVP-Q-UV-3.88	6.00	3.88	\$890.00
9110034	CF800-ZLVP-Q-UV-5.38	8.00	5.38	\$3,000.00

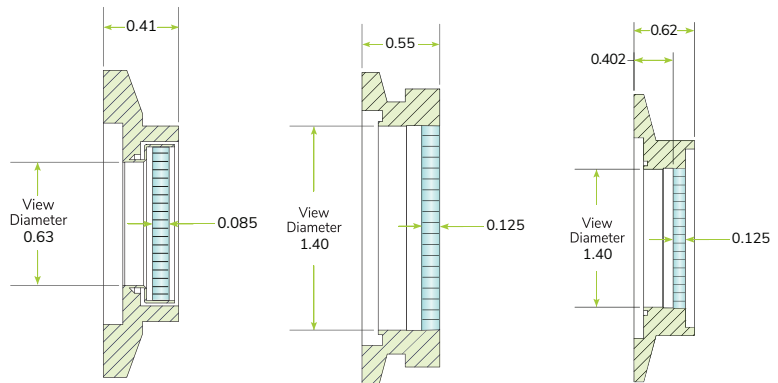


Fused Silica (Quartz) Viewports

ISO-QF (KF) UV Grade Fused Silica Viewports

Features:

- Vacuum rating of 1x10⁻⁹ torr
- Thermal range: -100°C to 200°C
- ISO-QF (KF, NW) flange
- Body is manufactured from 304 stainless steel
- Viewing window is manufactured from UV grade fused silica
- Transition material is Kovar
- Avoid thermal changes in excess of 10°C/minute
- Do not expose to pressure above 1 atmosphere



Specifications:

- TWD < 10 λ @ 632nm (peak to valley)
- Parallelism < 30 arc minutes
- Surface finish: 40/20 scratch-dig
- Homogeneity grade: F
- Inclusion class: 2

Options: Call for price & availability

- Custom window sizes
- Alternative Materials: Titanium, 316LN

PART #	REFERENCE ID	FLANGE SIZE	VIEW DIAMETER	UNIT PRICE
9110012	QF25-ZLVP-Q-UV-0.63	1.57	0.63	\$290.00
9110013	QF40-ZLVP-Q-UV-1.40	2.16	1.40	\$300.00
9110014	QF50-ZLVP-Q-UV-1.40	2.95	1.40	\$265.00



ConFlat (CF) DUV Grade Fused Silica Viewport

Description:

- DUV grade (laser) fused silica window
- Zero-length profile
- ConFlat flange
- Laser grade fused silica window
- Bakeable to 200°C
- Non-magnetic materials
- Excellent transmission for UV to 248nm
- UHV compatible

Options:

Call for price & availability

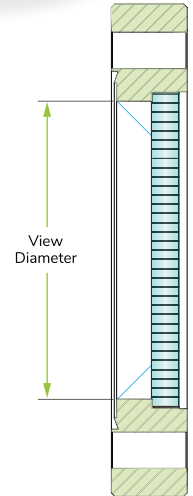
- Custom window sizes
- Alternative Materials: Titanium, 316LN
- IR Grade (Low OH)
- EUV Grade (Excimer)



Specifications:

- Flange material:
 - 316L stainless steel (1.33")
 - 304 stainless steel (2.75" to 6.00")
- Window material: Corning HPFS 7980 fused silica or equivalent
- TWD < $\lambda/4$ @ 632nm (peak to valley)
- Parallelism:
 - < 30 arc seconds (1.33")
 - < 10 arc seconds (2.75" to 6.00")
- Surface finish: 20/10 scratch-dig
- Thermal range: -100°C to 200°C
- Bake-out ramp rate: 20°C per minute
- Homogeneity grade: A
- Inclusion class: 0
- Leak rate < 1×10^{-9} atm-cc/sec He

PART #	REFERENCE ID	FLANGE SIZE	VIEW DIAMETER	UNIT PRICE
9118040	CF133-ZLVP-Q-DUV-0.63	1.33	0.63	\$365.00
9118041	CF275-ZLVP-Q-DUV-1.40	2.75	1.40	\$415.00
9118042	CF450-ZLVP-Q-DUV-2.69	4.50	2.69	\$1,100.00
9118043	CF600-ZLVP-Q-DUV-3.88	6.00	3.88	\$1,610.00



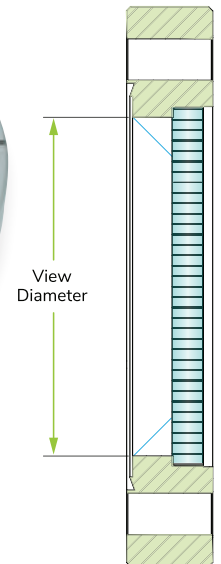
ConFlat (CF) DUV Grade Fused Silica Viewport, Single AR Coating

Description:

- DUV grade (laser) fused silica window
- Single AR coating
- Anti-reflective coating for minimized reflectance
- Bakeable to 200°C
- Non-magnetic materials
- Zero-length profile
- UHV compatible

Specifications:

- Flange Material: 304 stainless steel
- Window Material: Corning HPFS 7980 Fused Silica or equivalent
- TWD < $\lambda/4$ @ 632nm (peak to valley)
- Parallelism < 10 arc seconds
- Surface Finish: 20/10 scratch-dig
- Thermal Range: -100°C to 200°C
- Bake-Out Ramp Rate: 20°C per minute
- Homogeneity Grade: A
- Inclusion Class: 0
- Leak rate < 1×10^{-9} atm-cc/sec He
- AR coated both sides:
 - 780nm, R < 0.25% per surface
 - 1064nm, R < 0.25% per surface
- Laser damage threshold: 10 J/cm² for 10 ns pulse



PART #	REFERENCE ID	FLANGE SIZE	VIEW DIAMETER	UNIT PRICE
9118050	CF275-ZLVP-Q-DUV-SAR-1064-1.40	2.75	1.40	\$800.00
9118051	CF450-ZLVP-Q-DUV-SAR-1064-2.70	4.50	2.70	\$1,435.00
9118052	CF275-ZLVP-Q-DUV-SAR-780-1.40	2.75	1.40	\$800.00
9118053	CF450-ZLVP-Q-DUV-SAR-780-2.70	4.50	2.70	\$1,435.00

Options:

Call for price & availability

- Custom sizes
- Materials: Titanium, 316LN
- EUV Grade

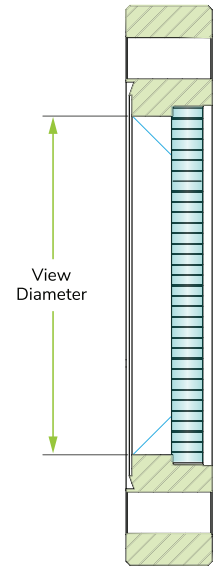
ConFlat (CF) DUV Grade Fused Silica Viewport, BBAR Coating

Description:

- DUV grade (laser) fused silica window
- Broadband anti-reflective coating for optimum performance
- Bakeable to 200°C
- Non-magnetic materials
- Zero-length profile
- UHV compatible

Specifications:

- Flange Material: 304 stainless steel
- Window Material: Corning HPFS 7980 Fused Silica or equivalent
- TWD < $\lambda/4$ @ 632nm (peak to valley)
- Parallelism < 10 arc seconds
- Surface Finish: 20/10 scratch-dig
- Thermal Range: -100°C to 200°C
- Bake-Out Ramp Rate: 20°C per minute
- Homogeneity Grade: A
- Inclusion Class: 0
- BBAR coated both sides:
 - 425-760nm, R avg. < 0.5% per surface
 - 550-1100nm, R avg. < 0.5% per surface
- Laser damage threshold: 10 J/cm² for 10 ns pulse
- Leak rate < 1 X 10⁻⁹ atm-cc/sec He



Options: Call for price & availability

- Custom window sizes
- Alternative Materials: Titanium, 316LN

PART #	REFERENCE ID	FLANGE SIZE	VIEW DIAMETER	UNIT PRICE
9118054	CF275-ZLVP-Q-DUV-BBAR-425-760-1.40	2.75	1.40	\$790.00
9118055	CF450-ZLVP-Q-DUV-BBAR-425-760-2.69	4.50	2.69	\$1455.00
9118056	CF275-ZLVP-Q-DUV-BBAR-550-1100-1.40	2.75	1.40	\$800.00
9118057	CF450-ZLVP-Q-DUV-BBAR-550-1100-2.69	4.50	2.69	\$1,490.00

Fused Silica (Quartz) Viewports

Fused Silica Viewport Available Options - Call for Price and Availability

- All Titanium Viewports
- Weld Adapters
- Re-entrant Design
- ISO Flanges
- AR Coating for 1550nm
- AR Coating for 808nm
- Dual AR Coatings
- EUV Grade (Excimer) Viewports
- IR Grade (Low OH) Viewports
- Geochronological Viewports
- Custom viewports and coatings



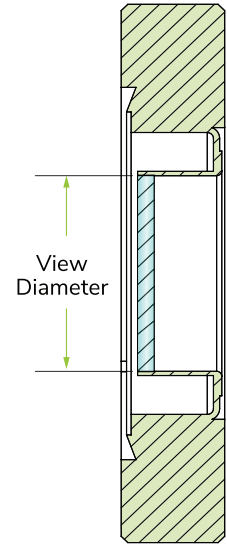
ConFlat (CF) UV Grade Sapphire Viewport

Description:

- Single crystal UV grade sapphire window
- ConFlat (CF) Flange
- Bakeable to 450°C
- Excellent Transmission from 250nm to 5 microns
- UHV Compatible

Options: Call for price & availability

- Custom window sizes
- Alternative Materials: Titanium, 316LN



PART #	REFERENCE ID	FLANGE SIZE	VIEW DIAMETER	UNIT PRICE
9118128	CF275-ZLVP-S-UV-0.94	2.75	0.94	\$295.00
9118127	338-ZVP-S-0.943	3.38	0.94	\$700.00
9118130	CF450-ZLVP-S-UV-1.94	4.50	1.94	\$800.00
9118132	CF800-ZLVP-S-2.95	8.00	1.94	\$2,990.00

ISO-QF (KF) UV Grade Sapphire Viewport

Description:

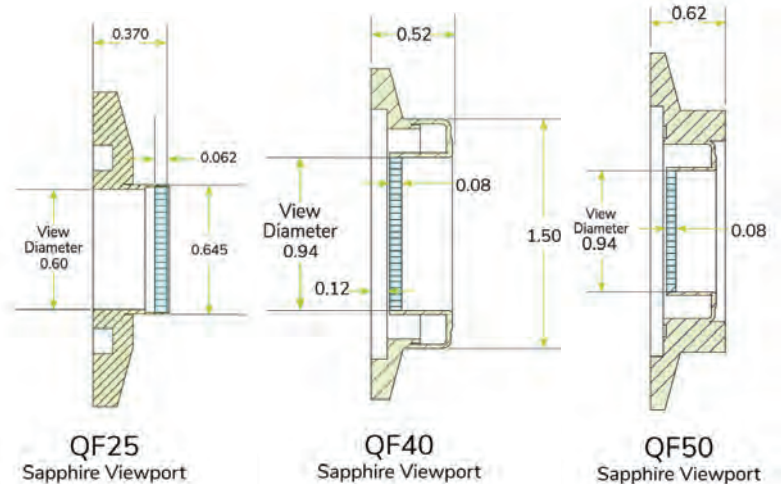
- ISO-QF (KF, NW) flange
- Single crystal UV grade sapphire window
- Bakeable to 450°C
- Excellent transmission from 250nm to 5 microns
- UHV compatible

Specifications:

- Window material: UV grade sapphire
- TWD < 8 λ @ 632nm (peak to valley)
- Parallelism < 3 arc minutes
- Surface finish: 50/20 scratch-dig
- Thermal range: -100°C to 450°C
- Leak rate < 1 X 10⁻⁹ atm-cc/sec He

Options: Call for price & availability

- Custom window sizes
- Alternative Materials: Titanium, 316LN

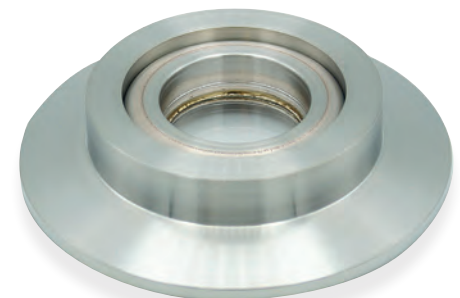


QF25
Sapphire Viewport

QF40
Sapphire Viewport

QF50
Sapphire Viewport

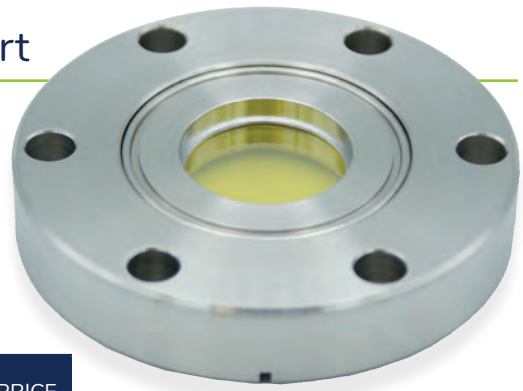
PART #	REFERENCE ID	FLANGE SIZE	VIEW DIAMETER	UNIT PRICE
9110059	QF25-ZLVP-S-UV-0.60	1.57	0.60	\$270.00
9110060	QF40-ZLVP-S-UV-0.94	2.16	0.94	\$290.00
9110061	QF50-ZLVP-S-UV-0.94	2.95	0.94	\$300.00



ConFlat (CF) Zinc Selenide (ZnSe) Viewport

Description:

- Zinc selenide (ZnSe) viewport
- UHV rated vacuum optics
- 0.90" view diameter
- 2.75" ConFlat flange
- Bakeable to 200°C
- Vacuum-optics with zinc selenide window
- Stainless steel housing and flange
- UHV compatible



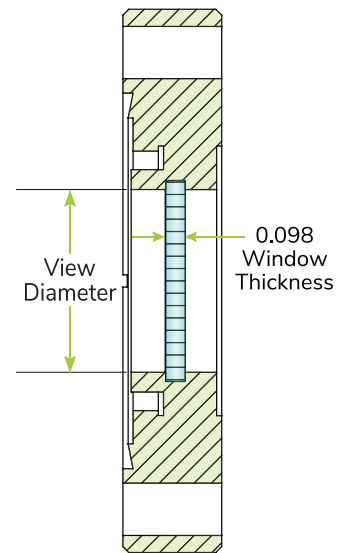
PART #	REFERENCE ID	FLANGE SIZE	VIEW DIAMETER	UNIT PRICE
9118060	CF275-ZLVP-ZNSE-0.90	2.75	0.90	\$690.00

ConFlat (CF) Zinc Selenide (ZnSe) Viewport, Broadband AR Coating

Description:

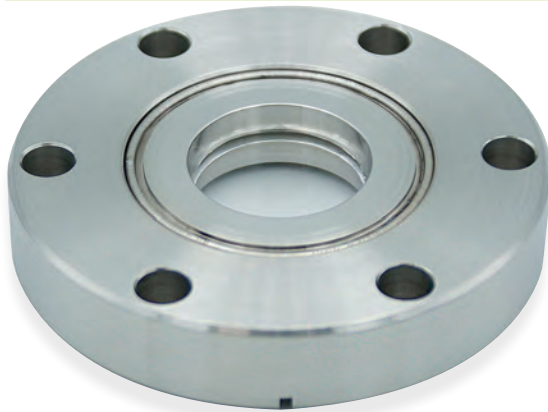
- Zinc selenide (ZnSe) viewport
- Broadband AR coating @ 8-12 microns
- UHV rated vacuum optics
- 0.90" view diameter
- 2.75" ConFlat flange
- Vacuum-optics w/ zinc selenide window
- Anti-reflective coating for optimum performance
- Bakeable to 200°C
- UHV compatible
- Stainless steel housing and flange

PART #	REFERENCE ID	FLANGE SIZE	VIEW DIAMETER	UNIT PRICE
9118061	CF275-ZLVP-ZNSE-BBAR-0.90	2.75	0.90	\$900.00



ZnSe and MgF2 Viewports

ConFlat (CF) Magnesium Fluoride (MgF2) Viewport



Description:

- Magnesium fluoride (MgF2) viewport
- UHV rated vacuum optics
- 2.75" ConFlat flange
- 0.90" view diameter

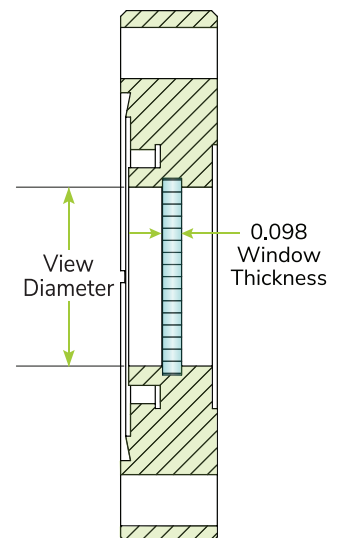
Specifications:

- Flange material: 304 stainless steel
- Window material: Single crystal, 0° Magnesium Fluoride
- TWD < $\lambda/4$ @ 632nm (peak to valley)
- Parallelism: < 3 arc minutes
- Surface finish: 20/10 scratch-dig
- Thermal range: -100°C to 200°C
- Bake-out ramp rate: 20°C per minute
- Leak rate < 1×10^{-9} atm-cc/sec He

Options: Call for price & availability

- Custom window sizes
- Alternative Materials: Titanium, 316LN
- Custom Coatings
- QF (KF) Flanges

PART #	REFERENCE ID	FLANGE SIZE	VIEW DIAMETER	UNIT PRICE
9118062	CF275-ZLVP-MGF2-0.90	2.75	0.90	\$690.00



ConFlat (CF) Calcium Fluoride CaF2 UHV Viewport



Specifications:

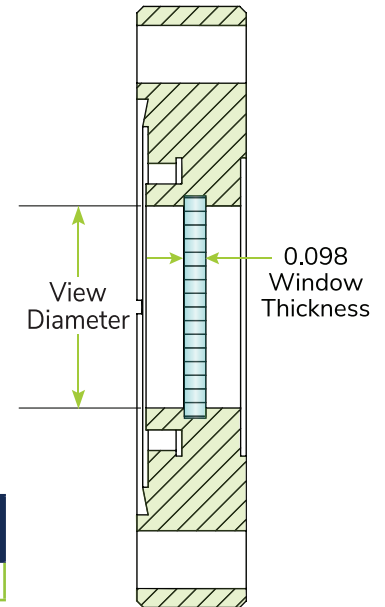
- Flange material: 304 stainless steel
- Window material: Single crystal calcium fluoride
- TWD < $\lambda/4$ @ 632nm (peak to valley)
- Parallelism: < 3 arc minutes
- Surface finish: 20/10 scratch-dig
- Thermal range: -100°C to 200°C
- Bake-out ramp rate: 20°C per minute
- Leak rate < 1×10^{-9} atm-cc/sec He

Description:

- Calcium Fluoride (CaF2) Viewport
- UHV rated vacuum optics,
- 0.90" view diameter
- 2.75" ConFlat flange
- Vacuum-optics with Calcium Fluoride window
- Bakeable to 200°C
- Stainless steel housing and flange
- UHV compatible

Options: Call for price & availability

- Custom window sizes
- Alternative Materials: Titanium, 316LN
- Custom Coatings
- QF (KF) Flanges



PART #	REFERENCE ID	FLANGE SIZE	VIEW DIAMETER	UNIT PRICE
9118063	CF275-ZLVP-CAF2-0.90	2.75	0.90	\$690.00

Replacement Parts

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
0501085	250-PVP	Replacement Glass Disk	\$22.00
0501185	250-PVP-Q	Replacement Quartz Disk	\$105.00
9112000	250-WVP-RSK	Replacement fluoroelastomer seals (2) and bolt kit	\$18.00
0501090	400-PVP	Replacement Glass Disk	\$135.00
0501190	400-PVP-Q	Replacement Quartz Disk	\$418.00
9112001	400-WVP-RSK	Replacement fluoroelastomer seals (2) and bolt kit	\$20.00
0501095	600-PVP	Replacement Glass Disk	\$150.00
0501195	600-PVP-Q	Replacement Quartz Disk	\$360.00
9112002	600-WVP-RSK	Replacement fluoroelastomer seals (2) and bolt kit	\$23.00





Illum·A·View™

**THE HANDS-FREE SOLUTION
TO YOUR DARK CHAMBER PROBLEM**



Illum-A-View Chamber Light

11

Researchers have been working in the dark—straining to see inside a dimly lit vacuum chamber. You’ve tried hand-held flashlights or integrated “goose-neck” lamps and have been blinded by the glare on the glass or have had your view blocked by the light source itself.

ANCORP developed the Illum-A-View—a lightweight ring fitted with bright natural white LEDs that shine directly into your chamber with minimal viewing obstruction—as a solution. Illum-A-View easily fits over existing viewports, allowing you to shine a light on your research.

- Slim design machined from lightweight aluminum
- Bright natural white LEDs focus light into your chamber, always stays cool to the touch, and have a lifespan of over 30,000 hours.
- Available in standard viewport sizes: CF275 · CF450 · CF600 · CF800 · CF1000
- Mounts securely onto viewport at any angle using 3 small set screws
- Plugs directly into standard AC outlet

PART #	REFERENCE ID	DESCRIPTION	A (in)	DIAM. B (in)	C (in)	WIDTH D (in)	UNIT PRICE
9120020	LVP-CF275-L120-NW-B	CF275 Illum-A-View Blue 120V	7.49	3.10	0.52	1.38	\$335.00
9120040	LVP-CF450-L120-NW-B	CF450 Illum-A-View Blue 120V	8.00	4.84	0.73	1.38	\$360.00
9120060	LVP-CF600-L120-NW-B	CF600 Illum-A-View Blue 120V	8.63	6.34	0.80	1.38	\$385.00
9120080	LVP-CF800-L120-NW-B	CF800 Illum-A-View Blue 120V	9.38	8.38	1.00	1.38	\$410.00
9120100	LVP-CF1000-L120-NW-B	CF1000 Illum-A-View Blue 120V	9.38	10.38	2.00	1.38	\$435.00

To place an order or find out more information about Illum-A-View, contact one of our applications engineers at 1-800-352-6431 or visit us online at www.ancorp.com.

Up-to-Air Valves

Installation of an **ANCORP** up-to-air valve allows you to vent your chamber to atmosphere or backfill your chamber with the gas of your choice. Up-to-air valves are available in two mounting options: center or side mounting.

Center mounted valves are welded to the flange, side mounted valves are sealed to the side port of a double sided CF flange with an NPT fitting and allow in-line installation of the valve in your system.



Features:

- Valve type: 1/4 inch, bellows sealed
- Actuation: manual
- Temperature range:
CF flange mount: 60°C up to 315°C
ISO-QF flange mount: -20°C up to 150°C
- Helium leak rated less than 4×10^{-9} Std.cc/s

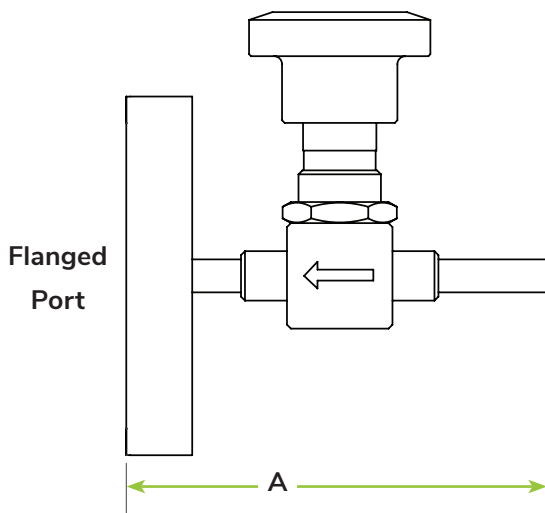
Product Notes:

- Vent or back fill your vacuum chamber

Options: call for price and availability

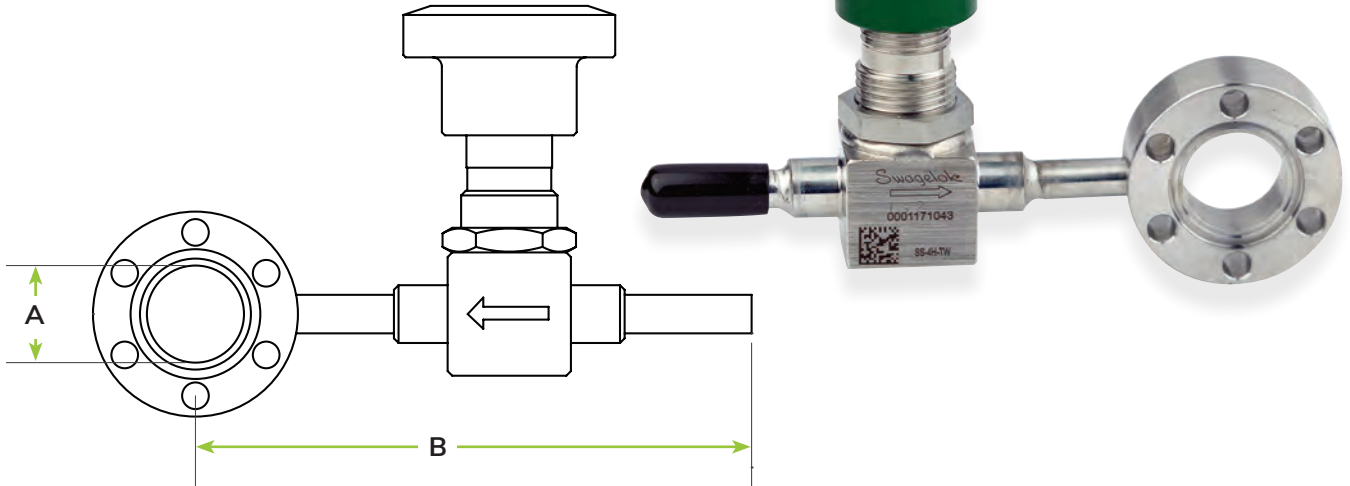
- Optional connections for valve port (VCR®, Swagelok®) standard is 1/4 inch tube end.
- Valves with side mounting to CF flanges can also be provided with a double port CF flange for the addition of a vacuum gauge.

Up-to-Air Valve with CF Flange Port Center Mount



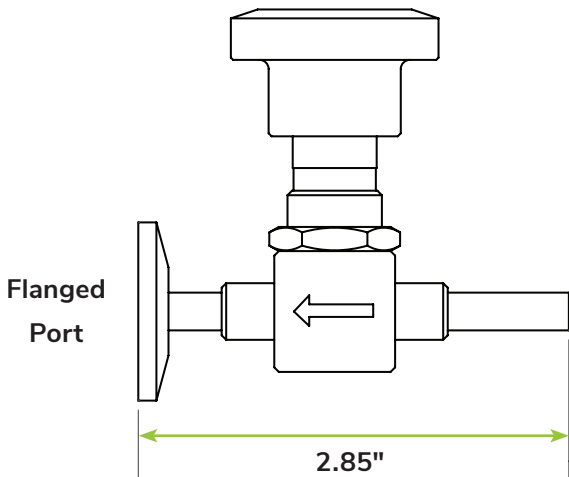
PART #	REFERENCE ID	FLANGED PORT	A (in)	DESCRIPTION	UNIT PRICE
9100105	CF133-025-UTAV-3.00	CF133	3.00	Up-to-Air Valve with a CF133 Flange port	\$255.00
9100106	CF275-025-UTAV-3.19	CF275	3.19	Up-to-Air Valve with a CF275 Flange port	\$265.00

Up-to-Air Valve with Double-Sided CF Flange Port - Side Mount



PART #	REFERENCE ID	FLANGED PORT	A (in)	B (in)	DESCRIPTION	UNIT PRICE
9100107	CF133XCF133-075-UTAV-3.60	CF133D	0.625	3.60	Up-to-Air Valve with a CF133 Flange	\$265.00
9100108	CF275XCF275-150-UTAV-4.00	CF275D	1.50	4.00	Up-to-Air Valve with a CF275 Flange	\$275.00

Up-to-Air Valve with ISO-QF Flange Port Center Mount



PART #	REFERENCE ID	FLANGED PORT	DESCRIPTION	UNIT PRICE
9100101	QF16-025-UTAV-2.85	QF16	Up-to-Air Valve with a QF16 Flange port	\$255.00
9100102	QF25-025-UTAV-2.85	QF25	Up-to-Air Valve with a QF25 Flange port	\$255.00
9100103	QF40-025-UTAV-2.85	QF40	Up-to-Air Valve with a QF40 Flange port	\$260.00
9100104	QF50-025-UTAV-2.85	QF50	Up-to-Air Valve with a QF50 Flange port	\$265.00

Up-to-Air Valves

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Vacuum Grease

Features:

- Temperature Range: -40°C up to 260°C
- Size: 5.3 oz tube

Product Notes:

- Assist in elastomer gasket sealing
- Low vapor pressure
- Inert



PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
0600001	GREASE-DC	Dow Corning® Vacuum Grease, 5.3 oz.	\$32.00



Anti-Seize

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
0605208	ASTL	Bolt thread lubricant eliminates galling of bolt and nut or tapped bolt hole	\$12.50
0605113	12-POINT WRENCH	Fits CF 12-point bolts	\$27.00

Flange Caps

PART #	REFERENCE ID	DESCRIPTION	UNIT PRICE
0600501	PC-QF16	1 Plastic cap for ISO-QF16 flange	\$1.50
0600502	PC-QF25	1 Plastic cap for ISO-QF25 flange	\$1.50
0600503	PC-QF40	1 Plastic cap for ISO-QF40 flange	\$1.50
0600504	PC-QF50	1 Plastic cap for ISO-QF50 flange	\$2.00
0600505	PC-LF63	1 Plastic cap for ISO-LF63 flange	\$2.50
0600506	PC-LF80	1 Plastic cap for ISO-LF80 flange	\$3.00
0600507	PC-LF100	1 Plastic cap for ISO-LF100 flange	\$3.50
0600515	PC-CF133	1 Plastic cap for CF133 flange	\$1.50
0600516	PC-CF212	1 Plastic cap for CF212 flange	\$1.50
0600517	PC-CF275	1 Plastic cap for CF275 flange	\$1.50
0600518	PC-CF338	1 Plastic cap for CF338 flange	\$2.00
0600519	PC-CF450	1 Plastic cap for CF450 flange	\$2.50
0600520	PC-CF462	1 Plastic cap for CF462 flange	\$2.50
0600521	PC-CF600	1 Plastic cap for CF600 flange	\$2.50
0600522	PC-CF800	1 Plastic cap for CF800 flange	\$3.00
0600523	PC-CF1000	1 Plastic cap for CF1000 flange	\$5.00
0600524	PC-CF1200	1 Plastic cap for CF1200 flange	\$6.00
0600525	PC-CF1325	1 Plastic cap for CF1325 flange	\$7.50



Custom Fabrication & Vacuum Chambers

Custom Fabrication & Vacuum Chambers



For over 50 years, **ANCORP** has fabricated high and ultra-high vacuum components and chambers. Our fabricated chambers range from one-of-a-kind chambers for research applications to production quantity chambers for OEM's.

In 2012, we opened a 6,500 square foot expansion to our factory to meet the growing demand for our Custom Fabrication division. The state-of-the-art facility is equipped with the latest manufacturing technology for CNC mills, lathes, and welding tools.

The expansion includes on-site offices for Engineering and Project Management staff - ensuring you receive the highest quality chamber on schedule. Our welders and Vacuum Welding Program have been certified by AWS and ASME. Our Quality Control procedures include dimensional checks using a Coordinate Measuring Machine (CMM) and leak checks using state-of-the-art helium mass spectrometer leak detectors.

High and ultra-high vacuum chambers are engineered products that require a specialized set of materials and fabrication processes. To help designers and practitioners better understand system specifications, a brief overview of **ANCORP's** capabilities and practices follows:

Engineering and Project Support

From your initial inquiry to when your finished chamber ships out of our factory, **ANCORP** engineers and project support staff are working to ensure your custom project meets your highest quality standards and is delivered on schedule. Before manufacturing begins, engineers trained in vacuum technology and chamber design review design drawings. Project support staff ensures the manufacturing schedule is kept and drawing specifications and tolerances are met. **ANCORP** can work with customer-supplied drawings or create drawings from simple, free hand sketches.



MATERIALS

Standard Materials: Because of its high corrosion resistance, low outgassing rates, wide range of applicable temperatures, machinability, weldability, and relative cost, **ANCORP's** standard material for tube sections,



spheres and roll-ups is 304L stainless steel. **ANCORP** routinely works with 304L and 316L stainless steel as well as 6061 T6 aluminum.

ANCORP specifies a magnetic permeability not to exceed 1.02μ when ordering raw 304 stainless materials. Welding and machining processes may result in heat affected or cold-worked zones that may increase magnetic permeability in these zones. Minimizing seams, joints, and bends in areas of high magnetic sensitivity should be considered during the design process. For applications that require superior magnetic flux shielding, mumetal can also be supplied.

Flanges: **ANCORP's** flanges are made from specially



manufactured raw stock that is designed to maximize the vacuum capabilities of 304 stainless. These processes minimize impurities and inclusions that could adversely impact the steel's ability to maintain vacuum. Grain size, orientation, and density are also engineered to maximize the vacuum performance of the raw stock.

FABRICATION

Welding: **ANCORP** uses tungsten inert gas (TIG/GTAW) welding techniques with high purity argon as the backfill/purge gas. Both manual and automated orbital welding machines are employed. In accordance with good UHV fabrication practices, non-filler material, internal fusion weld joints are utilized wherever possible.

In those instances where geometries preclude internal welds, 100% full penetration welds are provided. To minimize sources of virtual leaks, external welds are only used when required for structural reinforcement and are limited to stitch, skip, span, or spot weld configurations.

Machining: State-of-the-art, multi-axis, CNC machine centers are at the heart of **ANCORP's** operations. Our work processes are built upon the dual goals of high quality and rapid turnaround. Our machining coolants are sulfur free, biodegradable, and recycled.

Surface Finishes: The following finishing techniques are available: Glass Bead Blasted, Machine Polished, and Electropolished. Flanges and machined components (faced, turned or bored) come standard with a 32 micro-inch surface finish and a 16 microinch sealing surface. For a machined finish better than 32 micro-inch speak to one of our design engineers.

QUALITY CONTROL

All weld joints and sealing surfaces are certified with



state-of-the-art helium mass spectrometer leak detectors to a maximum rate of 1×10^{-9} std. cc helium. Leak testing is typically conducted in an "outside-in" or tracer-probe configuration. Helium (gas) bag tests are conducted as needed.

The highest standards of quality control inform every aspect of our operational practices. We welcome customer audits. Dimensional checks are confirmed with a computer controlled Coordinate Measuring Machine (CMM). Material and CMM certifications can be provided upon request.

CLEANING AND PACKAGING

Upon final machining, most components are washed in a heated, ultrasonic, detergent bath followed by multiple ultrasonic, deionized water rinses to remove all residual machining lubricants. After final rinse, parts are blown dry with dry, heated, filtered air and packaged.



After cleaning and testing, flanges and small components are hermetically sealed in vacuum board packaging and are ready for UHV installation. Larger flanges are covered with a layer of foil and protective plastic shields. Weldments and assemblies are then bagged, bubble-wrapped, and inserted into a shipping container surrounded by void filling "pillow" wrap. Custom crating is available.

Vacuum Chamber Tips to Save You Time & Money

Are you in the market for a custom vacuum chamber? If so, you likely understand by now that the process for procuring such an item is not as cut-and-dry as buying off-the-shelf vacuum components. Relative to catalog parts, vacuum chambers are often complex, bespoke, and expensive. Though some drivers of complexity and price are unavoidable when it comes to chambers, there are steps you can take when preparing your Request for Quote (RFQ) to reduce quote turnaround, optimize your design for manufacture, and, ultimately, save time and money.

At **ANCORP**, we're proud to manufacture world-class vacuum chambers right here in the United States. Our cylindrical, spherical, and box chambers serve a variety of industries and applications including ultra-high-vacuum (UHV), and each chamber is made-to-order here in Florida by our team of master machinists, welders, and fabricators.

Read on for 3 Vacuum Chamber RFQ Tips that will help you get faster responses, reduced lead times, and lower prices.

1. Eliminate Unnecessary Complexity

CAD software gives engineers and designers the freedom to come up with all manner of complex part geometries. But, when it comes time to actually cut steel, simplicity is a manufacturer's (and therefore a customer's) friend.

Increasingly complex part geometries require increasingly special machining capabilities. The more that specific machinery is required to make your chamber, the higher your price climbs and the longer your lead time becomes. When functionality and practicality allow it, reduce part complexity wherever

you can. Even the elimination of something seemingly simple like an angled or offset port can simplify your chamber to the point that the machining options for making it double or triple. When a manufacturer has multiple options for fabricating your chamber, both price and lead time will drop.

2. Avoid Excessive Geometric Dimensioning & Tolerancing (GD&T)

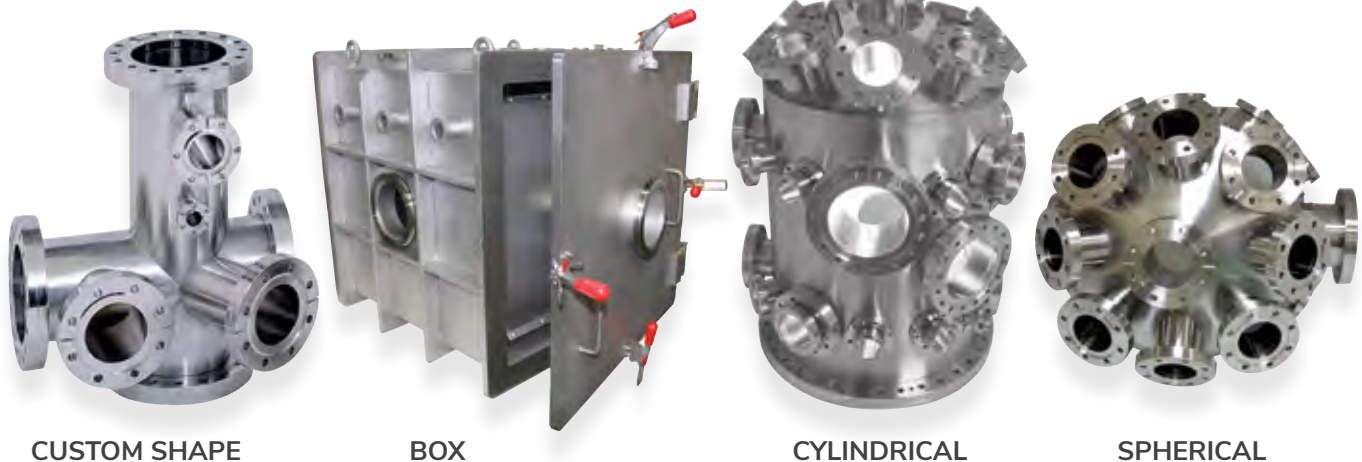
Understanding your true GD&T "must haves" is critical to getting both a price and lead time that are reflective of your needs. Applying unnecessary constraints (or making the magnitude of necessary constraints lower than required) will significantly impact the cost of fabricating a chamber.

For example, let's say a customer has specified a flatness tolerance on their chamber's top flange of 0.005". Practically speaking, they really only need a flatness of 0.020", but they've over-specified to be safe (or, perhaps their CAD software defaulted to 0.005" and they didn't change it). This seemingly small difference on paper could require an entire additional manufacturing step since, to achieve a top flange flatness of 0.005" on most chambers, a post-welding machining pass is required. The result is additional set up and machine time that is ultimately unnecessary to achieve what the customer really wants.

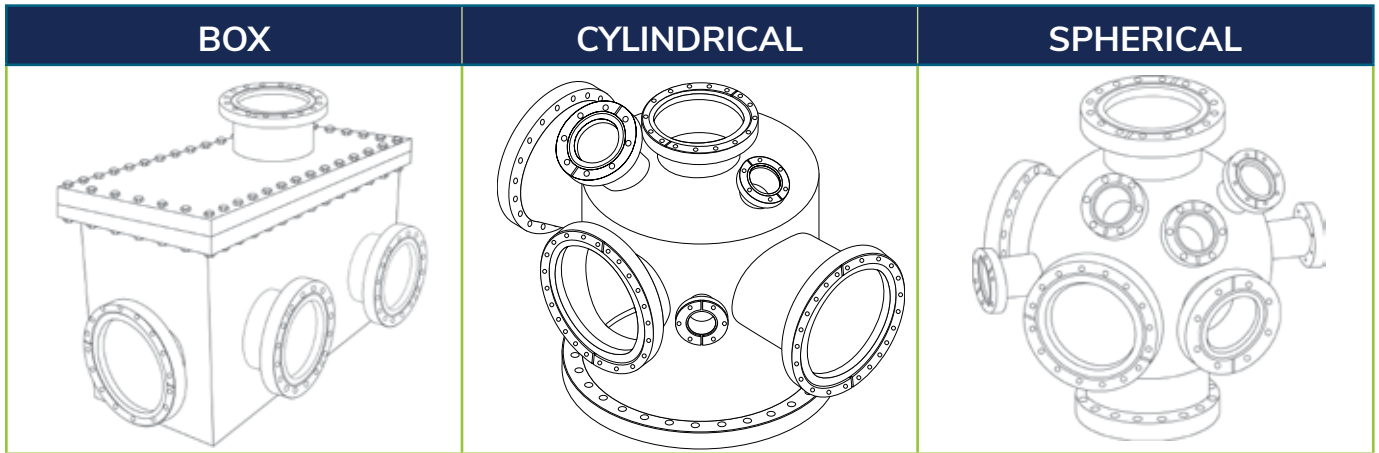
To ensure your quote is reflective of your actual needs, specify only the GD&T constraints that you truly require, and make the magnitudes of those constraints only as small as is functionally necessary.

Custom Vacuum Chambers

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Three Main Chamber Body Types



3. Provide a Set of Drawings that Fully Defines the Chamber

Even if your application requires you to keep tight GD&T constraints and complex part geometries, you can save yourself valuable time by providing the manufacturer with a set of RFQ drawings that fully define your chamber (PDFs are typically best).

Drawings that lack critical dimensions, don't specify tolerances, exclude a bill of materials, or don't provide enough views to fully understand the part typically provide more questions than answers to estimators. The process of compiling these questions and communicating back and forth to resolve them delays quote turnaround and costs all parties involved both time and effort. If you don't have the bandwidth to generate a fully defined set of 2D drawings, a fully defined 3D model of your chamber in STP format will usually get the job done.

These 3 simple steps will go a long way in gaining you faster quote turnaround, favorable prices, and shorter lead times.

Applications:

- Thin Film Deposition
- High Energy Physics
- Mass Spectrometry
- Surface Analysis
- Space Simulation
- Metrology
- and more



Custom Vacuum Chambers

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CUSTOM FEEDTHROUGH CONFIGURATOR

Create a customized feedthrough to your tailored specifications.

1	2	3	4	5	6	7	8	9
CONNECTION 1 FLANGE STYLE	CONNECTION 2 VACUUM SIDE	CONNECTION 3 ATMOSPHER SIDE (IF HYBRID)	SHAFT/ CONNECTOR OD (IF EXIST)	TYPE	OVERALL LENGTH	MATERIAL	VOLTAGE/ TORQUE (IF NEEDED)	MATERIAL (ELASTOMER RING)
CF133	x BP100	x TE	- 025	- FTST	- 3.00	- 304	- 50	- VT

1 Connection 1 Flange Style

Select your flange and flange size for Connection 1 from the chart below.

CF133xBP100xTE-025-FTST-3.00-304-50-VT

2 Connection 2 Vacuum Side

Select your flange and flange size for Connection 2 from the chart below.

CF133xBP100xTE-025-FTST-3.00-304-50-VT

3 Connection 3 Atmosphere Side

If customizing a hybrid feedthrough, select your flange and flange size for Connection 3 from the chart below.

CF133xBP100xTE-025-FTST-3.00-304-304-VT

CODE	STYLE	SIZES
BP	Baseplate	100
SWG	Swagelok	06, 12, 18, 25, 31, 38, 50, 62, 75, 87, 100
TE	Tube End	(Leave Size Blank)
MVCR	Male VCR	06, 12, 18, 25, 31, 38, 50, 62, 75, 87, 100
FVCR	Female VCR	06, 12, 18, 25, 31, 38, 50, 62, 75, 87, 100
MNPT	Male NPT	06, 12, 18, 25, 31, 38, 50, 62, 75, 87, 100
FNPT	Female NPT	06, 12, 18, 25, 31, 38, 50, 62, 75, 87, 100
QD	Quick Disconnect	06, 12, 18, 25, 31, 38, 50, 62, 75, 87, 100
CF*	ConFlat	133, 212, 275, 338, 450, 462, 600, 675, 800, 1000, 1200, 1325, 1400, 1450, 1650
QF*	Quick Flange	10, 16, 25, 40, 50

*Can only be used for Connection 1

4 Shaft/ Connector O.D.

If it exists, select the outer diameter for your shaft/connector.

CF133xBP100xTE-025-FTST-3.00-304-50-VT

CODE	SIZE
025	0.25 inches
038	0.38 inches
050	0.50 inches
075	0.75 inches

5 Feedthrough Type

Select the type of feedthrough. If selecting a baseplate, leave this blank.

CF133xBP100xTE-025-FTST-3.00-304-50-VT

CODE	SIZE
FTHC	High Current
FTRE	Rotary Elastomer
FTRF	Rotary Ferro Sealed
FTST	Non-Cryogenic Single Tube
FTDT	Non-Cryogenic Double Tube
FTCS	Cryogenic Single Tube
FTCD	Cryogenic Double Tube

6 Overall Length

Select the overall length for your feedthrough. The default length is 3.00 inches.

CF133xBP100xTE-025-FTST-3.00-304-50-VT

CUSTOM FEEDTHROUGH CONFIGURATOR

7 Material

Select the material for your feedthrough.

CF133xBP100xTE-025-FTST-3.00-304-50-VT

CODE	MATERIAL
304	304 Stainless Steel (Default)
316	316 Stainless Steel
BR	Buna-N
AL	Aluminum

8 Voltage/Torque

If needed, select the voltage/torque for your feedthrough. Leave blank if not.

CF133xBP100xTE-025-FTST-3.00-304-50-VT

CODE	VOLTAGE / TORQUE
50	50 Torque
160	160 Torque
400	400 Amp
1000	1000 Amp

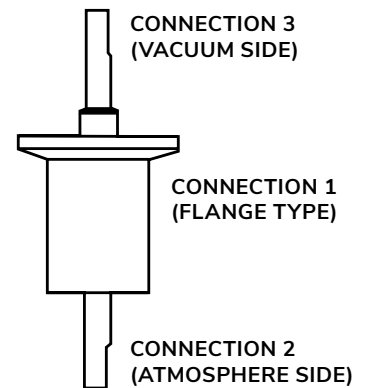
9 Elastomer Ring Material

If needed, select the material for your elastomer ring.

CF133xBP100xTE-025-FTST-3.00-304-50-VT

CODE	MATERIAL
VT	Viton
BN	Buna-N
SN	Silicon

PRIORITY/REGULATION	
1	For general feedthroughs, the flange part is omitted.
2	If connection 2 or 3 are identical, only Connection 2 or 3 is denoted.
3	Voltage refers to the transferable current (amp) and torque represents the maximum transmission torque.
4	Connection 2 goes to atmosphere side, whereas connection 3 stays at atmosphere side. See reference figure.
5	If nothing is attached on each side of the connection (just shaft), then Connection 1 and 3 are omitted.
6	For double feedthroughs, only one tube's overall length is measured.



\$\$ MONEY SAVING TIP \$\$

Some options can add significant costs to manufacturing. If you're not sure exactly what you need, call one of our trained technicians for money saving tips.



NEED ASSISTANCE? Call one of our trained customer service representatives at **1-800-352-6431**

CUSTOM FLANGE CONFIGURATOR

Create a customized flange tailored to your specifications.

1	2	3	4	5	6	7	8
FLANGE STYLE	FLANGE SIZE	FLANGE ATTRIBUTES	TUBE O.D.	TYPE	MATERIAL	THICKNESS (FOR DOUBLE SIDE)	POLISH (OPTIONAL)
CF	133	RT	- 075	- SF	- 316	- 0.75	- EP

1 FLANGE STYLE CF133RT-075-SF-316-0.75-EP

Choose a flange style.

CODE	FLANGE STYLE	VACUUM RATING	TEMPERATURE RANGE	SEAL(S)
CF	Conflat	1X10 ⁻¹³ Torr	-200°C to 450°C	OFHC Copper for UHV, Viton®
WF	Wire-Sealed	1X10 ⁻¹³ Torr	-200°C to 450°C	OFHC Copper for Wire Seal, Viton®
QF	ISO-Quick Flange (KF/NW)	1X10 ⁻⁸ Torr	-50°C to 200°C	Viton®, Buna, silicone
LF	ISO-Large Flange	1X10 ⁻⁸ Torr	-50°C to 200°C	Viton®, Buna, silicone
LFB	ISO-Large Flange Bolted	1X10 ⁻⁸ Torr	-50°C to 200°C	Viton®, Buna, silicone
ASA	ASA	1X10 ⁻⁸ Torr	-20°C to 200°C	Viton®

2 FLANGE SIZE

Next, select a **Flange Size** based on the **Flange Code** you chose in Step 1.

CF133RT-075-SF-316-0.75- EP

CODE	FLANGE SIZES
CF	133, 212, 275, 338, 450, 462, 600, 675, 800, 1000, 1200, 1325, 1400, 1450, 1650
WF	1200, 1400, 1700, 1900, 2200, 2700
QF	10, 16, 25, 40, 50, 63, 80, 100, 160, 200
LF	63, 80, 100, 160, 200, 250, 320, 400, 500
LFB	63, 80, 100, 150, 200, 250, 320, 400, 500
ASA	100, 150, 200, 300, 400, 600, 800, 1000

3 FLANGE ATTRIBUTES

Customize your flange with different attributes.

CF133RT-075-SF-316-0.75-EP

CODE	ATTRIBUTE	CODE	ATTRIBUTE
	Fixed (Default)	G	Grooved (ASA only)
	Clearance (Default)	F	Female (WF only)
R	Rotatable	M	Male (WF only)
T	Tapped	D	Dish-Head (WF only)
TM	Tapped Metric		
BT	Blind Tapped		

4 TUBE O.D.

Choose the outer diameter (inches) for your tube.

Add 000 (0.0 in.) if blank.

CF133RT-075-SF-316-0.75-EP

CODE	O.D. (in)	CODE	O.D. (in)
050	0.50	300	3.00
075	0.75	400	4.00
100	1.00	600	6.00
125	1.25	800	8.00
150	1.50	1000	10.00
200	2.00	1200	12.00

5 FLANGE TYPE

Specify the type of flange needed.

CF133RT-075-SF-316-0.75-EP

CODE	FLANGE TYPE
SF	Socket Weld
RF	Weld Ring
US	Unbored Stub
HNM	Half Nipple Machined (Stub Weld)
BW	Bored Weld
FNPT	Female National Pipe Thread
MNPT	Male National Pipe Thread
DS	Double Sided
WN	Weld Neck
WNB	Weld Neck Butt Weld

6 MATERIAL

Choose from one of our different flange materials. The default material is 304, leave blank if default.

CF133RT-075-SF-316-0.75-EP

CODE	TYPE OF MATERIAL
304	304 Stainless Steel (Default)
316	316 Stainless Steel
AL	Aluminum

7 THICKNESS

If you chose a double-sided flange in Step 3, specify the thickness you would like for your flange here.

CF133RT-075-SF-316-0.75-EP

8 POLISH

This is an optional step. If you would like your flange electro-polished, you can write "EP", otherwise leave this blank.

CF133RT-075-SF-316-0.75-EP



TECH TIP

Though a Zero Length Reducer is technically a flange, it follows the format of the nipple configurator.

\$\$ MONEY SAVING TIP \$\$

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NEED ASSISTANCE? Call one of our trained customer service representatives at **1-800-352-6431**

CUSTOM NIPPLE CONFIGURATOR

Create a customized nipple to your tailored to your specifications.

1	2	3	4	5	6	7	8
FLANGE 1	FLANGE 2	TUBE O.D.	TUBE 2 O.D. (IF CONICAL)	TYPE	LENGTH	MATERIAL	POLISH (OPTIONAL)
CF275	x CF133R	- 075	x 050	- N	- 4.00	- 316	- EP

1 FLANGE 1

Follow steps **A**, **B**, and **C** to customize flange 1. If flange 1 and flange 2 are different sizes, this will be the larger flange.

CF275XCF133R-075X050-N-4.00-316-EP

2 FLANGE 2

Repeat **A**, **B**, and **C** from Step 1 for flange 2. If flange 1 and flange 2 are different sizes, this will be the smaller flange. Leave blank if configuring a half nipple.

CF275XCF133R-075X050-N-4.00-316-EP

A. Choose from one of our different flange styles.

CODE	STYLE	VACUUM RATING	TEMPERATURE RANGE	SEAL(S)
CF	Conflat	1X10 ⁻¹³ Torr	-200°C to 450°C	OFHC Copper for UHV Viton®
QF	ISO-Quick Flange (KF/NW)	1X10 ⁻⁸ Torr	-50°C to 200°C	Viton®, Buna, silicone
LF	ISO-Large Flange	1X10 ⁻⁸ Torr	-50°C to 200°C	Viton®, Buna, silicone
LFB	ISO-Large Flange Bolted	1X10 ⁻⁸ Torr	-50°C to 200°C	Viton®, Buna, silicone
ASA	ASA	1X10 ⁻⁸ Torr	-20°C to 200°C	Fluoroelastomer

B. Select a flange size based on the flange style you chose in step **A**.

STYLE	FLANGE SIZES
CF	133, 212, 275, 338, 450, 462, 600, 675, 800, 1000, 1200, 1325, 1400, 1450, 1650
QF	10, 16, 25, 40, 50
LF	63, 80, 100, 160, 200, 250, 320, 400, 500
LFB	63, 80, 100, 150, 200, 250, 320, 400, 500
ASA	100, 150, 200, 300, 400, 600, 800, 1000

C. Select a flange attribute based on the flange style and size you chose.

CODE	ATTRIBUTE	CODE	ATTRIBUTE
	Fixed (Default)	G	Grooved (ASA only)
	Clearance (Default)	F	Female (WF only)
R	Rotatable	M	Male (WF only)
T	Tapped	D	Dish-Head (WF only)
TM	Tapped Metric	DS	Double-Side
BT	Blind Tapped		

If one flange is rotatable and the other is fixed, it is simply called by the fixed variant.

Example.: CF133-075-N-3.00 is one fixed and one rotatable flange
Example: CF133XCF133-075-N-3.00 is two fixed flanges

3 TUBE O.D.

Choose the outer diameter (inches) for your first tube.

CF275XCF133R-075X050-N-4.00-316-EP

4 TUBE 2 O.D.

If configuring a conical nipple, choose the outer diameter (inches) for your second tube. Leave blank if not.

CF275XCF133R-075X050-N-4.00-316-EP

5 TYPE

CF275XCF133R-075X050-N-4.00-316-EP

CODE	TYPE
N	Nipple
HN	Half Nipple Welded
CR	Conical Reducer
ZLR	Zero Length Reducer

6 NIPPLE LENGTH

Specify the overall length (inches) of your nipple.

CF275XCF133R-075X050-N-4.00-316-EP

7 MATERIAL

Choose from one of our different nipple materials.

CF275XCF133R-075X050-N-4.00-316-EP

CODE	TYPE
304	304 Stainless Steel (Default)
316	316 Stainless Steel
AL	Aluminum

8 POLISH (optional)

This is an optional step. If you would like your flange electropolished, you can write "EP", otherwise leave blank.

CF275XCF133R-075X050-N-4.00-316-EP

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NEED ASSISTANCE: Call one of our trained customer service representatives at **1-800-352-6431**

METAL HOSE & BELLOWS CONFIGURATOR

Create a customized metal hose to your specifications.



1	2	3	4	5
FLANGE 1	FLANGE 2	TUBE O.D.	TYPE	LENGTH
CF275	x CF133R	- 075	- MH	- 3.00

1 FLANGE 1

Follow steps **A**, **B**, and **C** to customize flange 1. If flange 1 and flange 2 are different sizes, this will be the larger flange.

2 FLANGE 2

Repeat **A**, **B**, and **C** from Step 1 for flange 2. If flange 1 and flange 2 are different sizes, this will be the smaller flange. Leave blank if configuring a half nipple.

A.

First, choose from one of five different **Flange Styles**.

Example: "CF"

FAMILY CODE	FLANGE FAMILY	VACUUM RATING	TEMPERATURE RANGE	SEAL(S)
CF	Conflat	1X10 ⁻¹³ Torr	-200°C to 450°C	OFHC Copper for UHV or Viton® gasket
QF	ISO-Quick Flange (KF/NW)	1X10 ⁻⁸ Torr	-50°C to 200°C	Viton®, Buna, silicone
LF	ISO-Large Flange	1X10 ⁻⁸ Torr	-50°C to 200°C	Viton®, Buna, silicone
LFB	ISO-Large Flange Bolted	1X10 ⁻⁸ Torr	-50°C to 200°C	Viton®, Buna, silicone
ASA	ASA	1X10 ⁻⁸ Torr	-20°C to 200°C	Fluoroelastomer
TE	Tube Ends	-	-	Plain Cut Tube Ends

B.

Next, select a **Flange Size** based on the **Flange Family Code** you chose in Step **A**.

Ex:ample "CF133"

FAMILY CODE	FLANGE SIZES
CF	133, 212, 275, 338, 450, 462, 600, 675, 800, 1000, 1200, 1325, 1400, 1450, 1650
QF	10, 16, 25, 40, 50
LF	63, 80, 100, 160, 200, 250, 320, 400, 500
LFB	63, 80, 100, 160, 200, 250, 320, 400, 500
ASA	100(4.2), 150(5.0), 200(6.0), 300(7.5), 400(9.0), 600(11.0), 800(13.5), 1000(16.0)

C.

Finally, select a **Flange Attribute** based on the **Flange Family Code** and **Flange Size** chosen in Step **A** and **B**.

Example: "CF133T"

CODE	ATTRIBUTE
	Fixed (Default)
	Clearance (Default)
R	Rotatable
T	Tapped
TM	Tapped Metric
G	Grooved

If one flange is rotatable and the other is fixed, it is simply called by the fixed variant.

Example:
CF133-075-N-3.00 is one fixed and one rotatable flange

Example:
CF133XCF133-075-N-3.00 is two fixed flanges

3 TUBE O.D.

Choose the outer Diameter of your hose or bellows.

Example: "CF133TXCF133R-075"

CODE	O.D. (in)	CODE	O.D. (in)
050	0.50	300	3.00
075	0.75	400	4.00
100	1.00	600	6.00
125	1.25	800	8.00
150	1.50	1000	10.00
200	2.00	1200	12.00

4 TYPE

Choose a Hose Type

Example: "CF133TXCF133R-075-MH"

CODE	HOSE TYPE	DESCRIPTION
MH	Metal Hose	Medium Wall
B	Bellows	Thin Wall

Standard Thicknesses for Tube O.D.'s

Custom thicknesses available.

O.D. (in)	BELLOWS THIN WALL	METAL HOSE MEDIUM WALL
075	0.006	0.008
100	0.006	0.008
150	0.006	0.010
200	0.006	0.012
250	0.006	0.012
300	0.008	0.016
400	0.008	0.016
600	0.010	0.016

\$\$ MONEY SAVING TIP \$\$

Some options can add significant costs to manufacturing. If you're not sure exactly what you need, call one of our trained technicians for money saving tips.

5 LENGTH

Specify the length of your metal hose or bellows in inches.

Example: "CF133TXCF133R-075-MH-4.00"



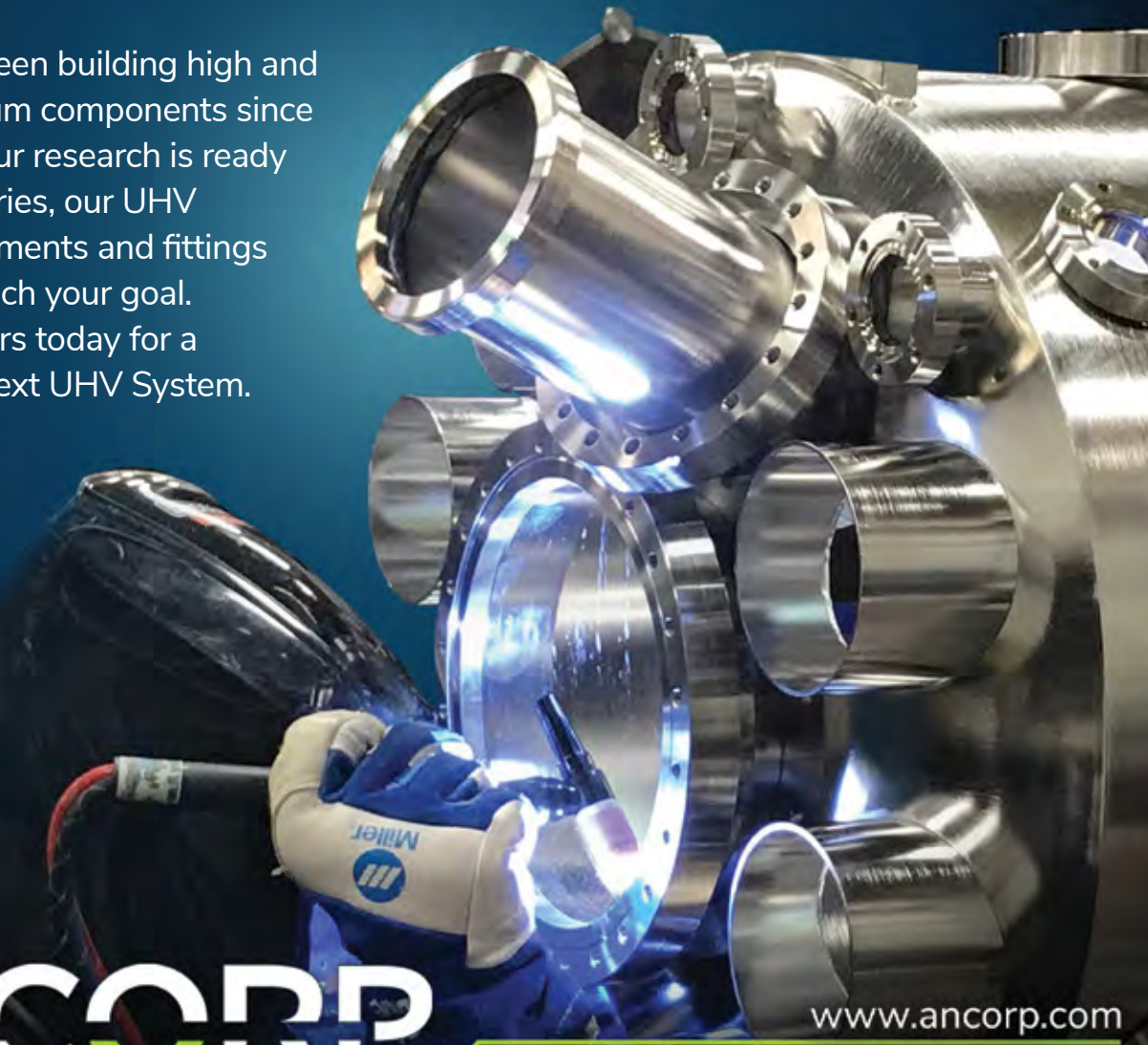
NEED ASSISTANCE: Call one of our trained customer service representatives at **1-800-352-6431**

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